

## **1. EXECUTIVE SUMMARY:**

**Applicant Information:** This proposal is being submitted as a collaborative effort between Coordinated Care Services, Inc. (CCSI) and New York University, McSilver Institute for Poverty Policy and Research (NYU-McSilver). CCSI is the lead agency for the proposal. For CCSI, the Principal Investigator is John F. Crilly, PhD, MPH, MSW. Dr. Crilly has nearly 30 years of experience in the public sector (local, state, federal) and academia in New York State and Louisiana. He has held clinical, administrative, and research positions in his career which has centered on improving quality within organizations and the practical use of health informatics and electronic communication. Andrew F. Cleek, PsyD, NYU-McSilver, is the project Co-Investigator. Dr. Cleek has also worked in the public, private, and academic sectors, particularly with agencies involved in providing support and services to individuals in poverty, particularly children. He currently leads a major New York State (NYS) initiative to provide technical assistance to mental health centers to improve their approach to interventions and practice and their financial operations. Both investigators lead teams of highly competent individuals in the fields of education, research, and evaluation and both have had experience developing software applications and tools to help provide decision support for particular target groups. For example, Dr. Crilly created an award-winning innovative decision support software model in 2012 using the electronic health record of the US Dept. of Veterans Affairs. Dr. Cleek has developed client-facing apps for smartphones (e.g., for providing homework support for children in poverty situations in New York City) and is developing app software for countries in Africa. In doing so, they have been immersed in the process required to actually formulate the groundwork to develop the software – understanding the issues, understanding the needs of stakeholders and users, and gaining expert input from all before the build begins. This ensures a higher quality end product and a more efficient software build.

**Information about Proposed Partnerships:** CCSI and NYU-McSilver are currently collaborators on a large project for NYS. Described further below, it is the Clinical Technical Assistance Center (CTAC) project. Its purpose is to instill efficient clinical and financial practices in mental health clinics across NYS. NYU-McSilver (Cleek, PI) is the lead and includes CCSI and other partners.

**Brief Description of Decision Support Issues/Questions:** We will focus on 2 areas identified in the RFP: A) “How can we assist workers to use the data collected on client (family) risks, strengths, and needs to target interventions (including specific evidence-based interventions)?” and B) “Which clients receiving behavioral services may not be receiving services at the appropriate level of care?”

**Brief Description of Proposed Solution:** We are experienced in the entire development process of decision support tools, including software build. We know that the quality developed at the front-end of the process – the discovery of what is needed and determination of the predictive modeling – will have true pay-offs at the back-end where the software is built. Without sufficient attention paid to the front end, there is greater likelihood that the derived product will be of poor quality which directly impacts the ability to market that product to other DHS agencies, thus diminishing sustainability. We have therefore chosen to focus our efforts on providing a high quality front-end process and coordinating the integration of those results into the end product – confirming whether a software build is, in fact, necessary.

**Funding Request:** We are requesting a total of \$317,925 for Personnel and Associated Agency costs and \$38,228 for Travel and Associated Costs for a **total of \$356,153**.

## **2. NARRATIVE:**

### **1) *Describe your organizations' history and experience conducting research, translating research into practice, developing/validating tools built on research, developing and implementing predictive models.***

This proposed project is part of an ongoing collaboration between Coordinated Care Services, Inc. and New York University's McSilver Institute on Poverty Policy and Research. Each is addressed separately below.

#### **A. Organization Histories**

##### **Coordinated Care Services, Inc.**

Coordinated Care Services, Inc. (CCSI), the lead agency for this proposal, is a not-for-profit management services organization with demonstrated expertise in the areas of behavioral health and human services. Based in Rochester, NY, CCSI provides a broad array of services, including: performance management, program and system evaluation, project and contract management, data analysis, financial management and support services, training and practice transformation services, including cultural competence assessment and training. CCSI has more than 20 years of experience working with county departments across New York State (NYS) and, more recently, in the District of Columbia. Previous work has included collaborating on the design of evaluation and quality improvement projects, serving as independent evaluator for local and federally funded projects, conducting system needs assessments, developing performance management plans, assisting with Plan-Do-Study-Act continuous quality improvement cycles, and providing data analysis support to federally funded research projects based in university and community settings.

##### **New York University (NYU) – McSilver Institute for Poverty, Policy, and Research**

The NYU McSilver Institute was founded in 2007 with the purpose of better understanding poverty, particularly in New York City (NYC), and developing practices to address it. The Institute studies current poverty-related issues and programs, pilots interventions in human services agencies, and serves as a supportive resource and change agent for agencies working to address poverty. It does this by conducting, promoting, and disseminating interdisciplinary applied research to address root causes of, effects of, and responses to poverty. Drawing on the substantial intellectual and scholarly resources of NYU and located within the Silver School of Social Work, the Institute partners with agencies and communities to develop research projects and policy/advocacy recommendations that have short- and long-term social impact.

NYU-McSilver recognizes the significant link between individuals, families, and communities and their external environments, as well as the interrelatedness of race and poverty. Within this important framework, NYU-McSilver sponsors and fosters:

- Applied Research in diverse areas of direct social, psychological, legal, and community-wide endeavors designed to assist those living in or near-poverty
- Development of Mutually Beneficial Partnerships between NYU-McSilver community-based agencies and organizations that are “on-the-ground” working with people living in poverty
- Organizational Development efforts that encourage untapped strengths in agencies and communities through research and evaluation

- Policy Development and Dissemination grounded in evidence-based research focused on “theories of justice,” the causes and consequences of poverty, and poverty amelioration
- Locating Research and Related Projects in the larger field of poverty studies and the work of scholars and agencies all over the world.

**B. Experience conducting research, translating research into practice, developing/validating tools built on research, developing and implementing predictive models**

Examples of CCSI's and NYU-McSilver's work illustrating our ability to conduct research – and importantly, to translate that research into practices that help to improve service delivery and the associated outcomes, are summarized briefly in this section.

**Coordinated Care Services, Inc.**

1. New York Care Coordination Program (NYCCP): *Categories: Translating Research into Practice, Predictive Modeling.*

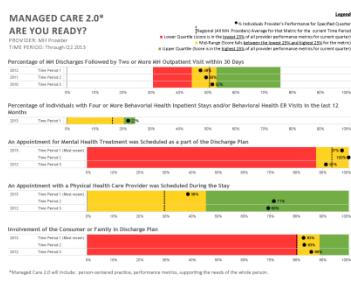
The NYCCP is a not-for-profit organization, with expertise in developing person-centered, recovery-focused systems of care in both urban and rural environments to improve access, quality, and cost-effectiveness of publicly funded behavioral health services.

Established in 2002 as a collaboration of local county mental health departments, providers, and peers/family members, NYCCP includes 10 New York counties. Most recently NYCCP worked in partnership with Beacon Health Strategies and CCSI to serve as the Behavioral Health Organization (BHO) for the western region of NYS. NYCCP leads the same partnership with Beacon and CCSI to manage the implementation of Medicaid Health Homes (HH) in 22 upstate counties.

CCSI has provided a full range of management supports to the NYCCP since its inception, including staffing key project functions (the NYCCP Project Director and support staff), fiscal management, and data analysis and reporting. Throughout its history, NYCCP's work has been guided by the ongoing collection, analysis, and use of performance data to improve practice.

Examples include:

- Development of a process to assess implementation and fidelity of person-centered practices by care managers. We developed results to be used as decision supports for designing new interventions which led to the development of a training curriculum and related tools used by providers across NYS (noted in Dulmus and Nisbet, 2013).
- Analysis of Medicaid claims data to assess the extent to which care coordination services were resulting in reductions in the use of acute services and increases in connection with outpatient care.
- For the BHO, CCSI has provided a series of analyses (SPSS) including weighted trending analyses and weighted aggregate performance analyses across the 33 providers in multiple counties. CCSI also developed, delivered, and provided training for a multi-dimensional Provider Profile Report Card (pictured next page) which portrayed outcomes, targets, and performance across time periods and measurement domains. This can be used to recommend CQI strategies to boost readiness for managed care. We also performed a predictive analysis (SPSS) around the use of services in relation to race/ethnicity, gender, and age.



- For the HH, which covers 22 Upstate NY counties, we developed the start-up data structure which involved a series of Excel and Access tools over a SQL data platform to make raw Medicaid data from NYS actionable at the HH governance level. We also performed extensive analyses (SPSS) across an integrated dataset (drawing from 4 separate datasets) to develop initial quality assurance results for individual HH providers. Through this format, we were able to link individuals across the individual stages of engagement.

- Currently working with the HH to help develop quality assurance and improvement mechanisms for the newly deployed NetSmart care manager software. One aspect of this development is the capability to use the data to identify individuals not receiving adequate care based on their acuity level.

## 2. Monroe County Departments Of Human Services and Public Health, Healthy Futures Grant: Categories: Conducting Research, Translating Research to Practice.

CCSI worked with the Monroe County Departments of Human Services and Public Health to design and administer the evaluation components of a three-year Center for Disease Control translation grant called "Healthy Futures." In close collaboration with the principal investigator and the contracted provider agencies (private and public), CCSI developed a comprehensive range of qualitative and quantitative measures to assess the impact of Healthy Futures on local child welfare practices. CCSI's team observed and analyzed the implementation of evidence-based practices in the areas of supervised parental visitation, trauma-sensitive therapies, parent skill-building, and primary pediatric care for youth in foster care. This translation evaluation focused on the fidelity of clinical practice, the extent of practice implementation within individual agencies, the numbers of youth and families served by the grant, and the impact of the grant on organizational behavior and provided local authorities with vital information about the feasibility and effectiveness of multi-agency systemic improvement efforts. CCSI's consultants have utilized strategies such as stakeholder interviews, focus groups, validated assessments of individual and organizational factors, and custom-designed evaluation tools.

## 3. Monroe County Office of Mental Health's Recovery Connection Program: Category: Conducting Research

The Recovery Connection program was developed to address the needs of individuals who frequently receive inpatient detoxification or rehabilitation services and who have experienced difficulty engaging in sustained addiction treatment. The need for this program was identified through feedback from local provider agencies and supported through the analysis of Medicaid claims and other data sources. CCSI collected program data using several methods and outcomes or findings were then used to support decisions for both policy and practice, such as which clients were being underserved in the behavioral healthcare system, the areas of deficit, and potential solutions.

## **New York University (NYU) – McSilver Institute for Poverty, Policy, and Research**

### **1. Center for Collaborative Inner-City Child Mental Health Services Research (CCCR):**

*Categories: Conducting Research, Translating Research to Practice.* CCCR was established in collaboration with: 1) the NYS Office of Mental Health, and 2) two family and community advocacy boards representing inner-city youth, families, and communities (Bronx Community Collaborative Board and the Family Advocates Research Board (FAR Board). The aim of the CCCR is to organize multi-disciplinary researchers on the conduct of child mental health services research to improve the overall health and mental health of vulnerable youth. The CCCR specifically focuses on the development and testing of novel clinical practices and service delivery models that are informed by existing empirical findings and the outcomes associated with intensive collaboration between researchers, practitioners, youth, and families living in inner-city neighborhoods.

### **2. STEP-UP: Promoting Youth Educational Success, Future Options, Mental Health and Positive Development within Inner-city High Schools & Local Communities: Category: *Translating Research into Practice.***

NYU-McSilver and partners have developed STEP-UP, a program designed by African-American and Latino adolescents (14 to 17 years of age) experiencing significant academic, social, and emotional issues for teens in similar circumstances. In partnership with two urban high schools, STEP-UP was designed to connect young people with mental health clinical supports, positive young adult role models, supported internships, employment opportunities and non-stigmatizing family-level interventions. The ultimate goal of STEP-UP is to offer intensive programming for young people within their natural contexts (home, school, and community) in order to organize supports geared towards high school graduation, college preparedness, and eventual employment success.

### **3. The Center for Mental Health Implementation and Dissemination Science in States for Children, Adolescents, and Families (IDEAS): Categories: *Translating Research into Practice, Predictive Modeling.***

IDEAS addresses challenges associated with closing the gap between research and practice in state systems serving children and families. The overarching aim is to improve implementation of evidence based practices (EBPs) through rigorous testing of strategies that target family and agency contexts. The Center's research studies use experimental methods and mixed qualitative and quantitative approaches to examine organizational, contextual, and family support approaches to improve client and system outcomes.

### **4. Clinical Technical Assistance Center (CTAC): Category: *Translating Research into Practice.***

NYU-McSilver Institute, in partnership with the NYU Child Study Center, houses the Clinical Technical Assistance Center (CTAC), which is a training, consultation, and educational resource center available to the nearly five hundred mental health clinics in NYS. The purpose of CTAC is to advance the effective and efficient provision of clinic treatment to adults, children, and families who rely on public sector services to meet their mental health needs in three key

areas: 1) best organizational practices; 2) evidence-informed engagement and; 3) evidence-informed, family-centered service delivery.

CTAC offers a variety of trainings and resources to help improve clinic operations and services, including webinars, seminars, and program trainings. NYU-McSilver employs effective approaches that reflect the context of day-to-day clinic realities. Specifically, CTAC's coordination of the Business Effectiveness Assessment Module (BEAM) and Business Efficiencies and Effectiveness Project (BEEP) exemplifies the type of projects that McSilver will draw from to support this proposal. BEAM is a collaborative of seventy enrolled clinics across NYS that NYU-McSilver guided through comprehensive self-assessments and planning processes to use data to identify clinical and operational outcome measures. BEEP was designed to assist participating clinics assess and identify opportunities to redesign financial structures and practice process flows, and to establish best practices to share across communities and agencies. These two initiatives have resulted in increased financial and operational health (and, thus, viability) to clinics, expanding their internal capacity and fostering participation with other organizations.

**2) *Describe relevant experience in working with human services practitioners (including government analysts, clinicians, social workers, leaders).***

**Coordinated Care Services, Inc.**

CCSI has a long history of working with practitioners in the health and human services arenas throughout New York State. Examples already noted above include:

- New York Care Coordination Program: NYCCP, BHO, HH.
- Monroe County Depts. Of Human Services and Public Health: Healthy Futures

Additional examples are as follows:

1. Monroe County of Mental Health: CCSI has provided a broad array of behavioral health management services to the Monroe County Office of Mental Health (MCOMH) since 1993. Current areas of support include:

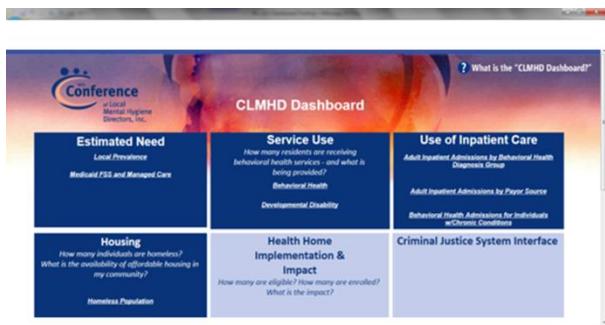
- *Contract and Performance Management:* CCSI manages behavioral health and developmental disability service contracts with 21 mental health service providers, 16 chemical dependency providers and 7 developmental disability agencies within Monroe County. To respond to the increasing emphasis on accountability at the State and local levels, CCSI and MCOMH staff has worked to develop systems and practices to collect and analyze the performance data needed to support ongoing monitoring activities.
- *Quality, Accountability, and Data Management:* CCSI provides the staffing and resources necessary to measure the effectiveness and performance of behavioral health services and maintains access to the information systems needed to support planning, policy and performance oversight activities in Monroe County. Work in this area involves using multiple data systems to measure performance at both the program and systems levels. This has included obtaining Medicaid claims and encounter data from the NYS Department of Health and analyzing these data to better describe care patterns and identify service gaps. More recently, staff has been trained to use a data analysis system developed by Salient Technology to support this work. We are proficient in using SAS, Stata, and SPSS.
- *Policy and Planning:* Together with the MCOMH Chief for Policy and Planning, CCSI staff has worked to analyze relevant State and national policies, including the local implications of

these policies, conduct community needs assessment activities, facilitate processes to identify priorities, and develop strategies to address them.

While CCSI focuses resources in MCOMH, CCSI does similar work in 28 counties in Upstate NY and thus is accustomed to county operations.

2. Rochester/Monroe County Homeless Continuum of Care: CCSI was recently selected as the Collaborative Applicant and fiduciary agent for the Homeless Continuum of Care (CoC) Project in this jurisdiction. As the Collaborative Applicant, CCSI works with leadership in the homeless system – government, provider agencies, and housing developers - to support the community in developing and implementing plans and strategies to address homelessness. Using the Homeless Management Information System linked with other relevant data sets (e.g., Medicaid, behavioral health) CCSI works with CoC leadership to support data-informed decision making for planning and HUD funding allocations.

3. Conference of Local Mental Hygiene Directors (CLMHD): CCSI provides an array of technical assistance support to the CLMHD, a statewide group of the Directors for Mental Hygiene Services for all counties in NYS. As part of this technical assistance, CCSI works with the leadership from multiple NYS Agencies and Counties to develop and implement a Data Dashboard to support systems planning and development at the County and Regional levels. The process to develop the key indicators for the dashboard display is on-going, with indicators being added as key elements are identified, vetted by leadership (are we using the best available indicator to address the question we want to answer?) and populated into the



dashboard upon conclusion of the process. The dashboard is intended to support County leadership in decision making, using available non-PHI data sources and providing trended views via business intelligence tools (Tableau). Data can be easily exported to excel formats for manipulation by the user. Current areas of the dashboard covering the behavioral health and developmental disabilities populations include

Prevalence, Service Utilization (Medicaid), Hospital Admission/Readmission, Continuity of Care (Post-Hospital Discharge), and Homeless Services (Point in Time Data). CCSI has also developed an accompanying Fiscal Dashboard with cost information to support the Counties. Several other areas of the dashboard are in development for inclusion in the near future (e.g., Jail/criminal justice, Child Welfare/System of Care).

4. Family Assessment Response (FAR) is an alternative response to families who have been referred to the Child Protective Services (CPS) system and who meet certain eligibility criteria. A solution-focused, strengths-based, and family-led approach is at the core of FAR, with the additional goals of identifying the need for, and then linking families to services. The traditional determination (i.e., indicated or unfounded) is not made on FAR reports. Implementation of FAR began within the Monroe County Department of Human Services (MCDHS), Child and Family Services Division, in January of 2010, with CCSI evaluating its implementation. The scope

of CCSI's evaluation work covered not only the process of implementing FAR (such as family and caseworker perspectives on the FAR approach), but also the impact and cost. Methodological techniques such as family questionnaires, child and family systems data, staff questionnaires, focus groups with staff, case-specific questionnaires, and financial analyses are being utilized. Specific data being collected include family satisfaction, stress levels, emotional responses to FAR, case practices and components, and family characteristics. Federal outcomes such as additional CPS reports or placement of children in foster care, staff perceptions of FAR impact, types of services for families, and service cost difference between FAR and non-FAR are also collected and will serve to provide an in-depth analysis of the FAR implementation process and goals achieved. Given that both FAR and CPS caseworkers sit on the teams involved in the FAR implementation, CCSI has been offered a unique opportunity for a rigorous and meaningful comparison between the "traditional" and "experimental" approach. Further, family perspectives data are being collected when the family enters CPS or FAR, at closing and then 3-months post-closing to assess any changes in families' experiences over time.

### **New York University (NYU) – McSilver Institute for Poverty, Policy, and Research**

NYU-McSilver carries out extensive work in the community. Examples already noted above include:

- Center for Collaborative Inner-City Child Mental Health Services Research (CCCR)
- Clinical Technical Assistance Center (CTAC)

An additional example is as follows:

1. Community Partnerships to Prevent Urban Health Risks (CHAMPIONS): The primary aim of CHAMPIONS is to advance scientific knowledge about research/community partnerships that can serve as the foundation for local adaptation, delivery, and testing of evidence-based prevention programs for inner-city African American and Latino adolescents. The project examines factors that influence urban, low income parents' willingness to collaborate in the delivery of evidence-based programs designed to reduce adolescent pregnancy, STDs, and HIV infection among inner-city minority youth. In addition, the study tests the impact of a community mentorship and training component on implementation, as well as on youth sexual risk intentions and behavioral outcomes.

### ***3) Describe any collaborative projects on which your organization worked, naming partner organizations.***

#### **Coordinated Care Services, Inc.:**

CCSI has a long history of supporting and working as part of multi-stakeholder collaboratives. Some recent examples include:

1. The Clinic Technical Assistance Center (CTAC): As noted above, CTAC is funded by the NYS Office of Mental Health to provide training, consultation, and educational resources to all licensed clinics in NYS. The goal of CTAC is to provide clinics with a set of technical assistance and training tools that promote effective care through efficient practices while also addressing the challenges associated with the recent changes in clinic regulations, financing, and overall healthcare reforms. As a part of the Center's leadership, CCSI collaborates with a strong set of New York state-based partners, including: New York University (NYU) Silver School of Social

Work, McSilver Institute for Poverty, Policy and Research, Institute for Community Living, Inc., Families Together, and New York Association of Psychiatric Rehabilitation Services, Inc. (NYAPRS), to provide training and technical assistance related to the implementation of evidence-based practices, billing practices and fiscal management, the use of data for quality improvement and decision making, and treatment supply and demand.

2. New York Care Coordination Program: As noted above, CCSI has supported this multi-county, multi-stakeholder collaborative aimed at improving services for individuals with serious mental illness. Members include: County Departments of Mental Health (Cayuga, Chautauqua, Wayne, Onondaga, Rensselaer, Westchester, Monroe, Erie and Chemung); Provider Agencies (Hillside Family of Agencies, Onondaga Case Management Services, Inc., Lake Shore Behavioral Health, Huther Doyle and Strong Behavioral Health) Peer and Family Representatives (Peer Advocate, Community Based Peer Initiatives Transitional Living Services, Mental Health Association of Olean, Housing Options Made Easy, Recovery Services, Center for Community Alternatives).

3. NYS Success: Connecting Systems of Care with Children and Families: In 2012, SAMHSA awarded Upstate New York with a four year, four million dollar grant to support broad-scale operation, expansion, and integration of systems of care (SOC) through the creation of a sustainable infrastructure. CCSI provides overall project management for this cross-systems initiative. Collaborators and partners include: Families Together in New York State, the Conference of Local Mental Hygiene Directors, YOUTH POWER!, and the Ad Council.

With the assistance of a designated core implementation and planning team, all 55 upstate NY counties are expected to successfully integrate and sustain the SOC values, principles, and practices within their own communities. Over the course of four years, each county will be brought into the NYS Success network as a member of one of four learning collaborative cohorts.

4. District of Columbia Depts. Of Behavioral Health and Child & Family Services: CCSI is currently partnering with Community Connections of New York and State University at Buffalo School of Social Work as the lead evaluator on several projects with the District of Columbia aimed at strengthening services for children and families. Two are described below:

- A system of care grant, funded by SAMHSA, is a multi-year initiative aimed at supporting the development and expansion of sustainable structures that provide children and families with access to the full range of needed community-based services. The District's priorities include expansion of evidence-based practices, increased informal parent-to-parent and youth-to-youth support, community education to decrease mental health stigma, support early identification and access to services, and development of a reinvestment strategy to sustain services.
- Trauma-informed child welfare practice is an initiative funded by the DC Administration on Child, Youth, and Families. The intent is to facilitate transformation of the District's current child welfare programs into processes which are trauma-informed, contributing to measureable improvements in social and emotional well-being of children in foster care.

## **New York University (NYU) – McSilver Institute for Poverty, Policy, and Research**

NYU-McSilver works with a number of partners for a variety of purposes. Examples already noted above include:

- Center for Collaborative Inner-City Child Mental Health Services Research (CCCR)
- Community Partnerships to Prevent Urban Health Risks (CHAMPIONS)
- STEP-UP: Promoting Youth Educational Success, Future Options, Mental Health and Positive Development within Inner-city High Schools & Local Communities
- Clinical Technical Assistance Center (CTAC)

Additional examples are as follows:

1. YMCA, National Alliance on Mental Illness, Brooklyn Academy of Music: NYU-McSilver has extensive experience providing evaluation services for large and varied organizations such as the YMCA of Greater New York, the National Alliance for Mental Illness (NAMI), and the Brooklyn Academy of Music (BAM). Since January of 2013, NYU-McSilver staff has contracted with the YMCA to provide program evaluation services for three major programs aimed at identifying sub-groups of individuals at high risk for crossing over into the criminal justice or other systems and need for preventive services using client information and outcomes data. For BAM, NYU-McSilver works with its Education department to assess the impact of a social justice program on youth program participants' academic and psychosocial outcomes. This evaluation is designed to predict the potential impact of the program on the community and identify new measures and data collection needs to help increase effectiveness. Evaluation services provided to NAMI include development of an evaluation protocol, survey tools, and staff training for three programs – Basics, Family to Family, and Peer to Peer – to measure the impact of services on participant knowledge of managing their mental and physical health.
2. Community Collaborative Board (CCB): The Bronx Community Collaborative Board is a formalized partnership between representatives of urban neighborhoods and researchers. Currently, the Collaborative Board oversees a number of federally and locally funded research studies focused on designing, delivering, and testing family-based prevention and intervention services for elementary, junior high and high school age urban youth and their families. The Collaborative Board consists of 30 members, urban youth, parents, school staff, representatives from community-based agencies and researchers.

### ***4) Describe the way your organization or collaboration would manage the process of working with DHS to design and implement decision support tools and predictive analyses.***

We are seeking to develop the foundation of rigorous discovery necessary to advise the development of decision support strategies for 2 questions posed in the RFP: A) “How can we assist workers to use the data collected on client (family) risks, strengths, and needs to target interventions (including specific evidence-based interventions)?” and B) “Which clients receiving behavioral services may not be receiving services at the appropriate level of care?” Before we can begin to do begin any work, we must develop be prepared to do so in line with the current processes within that environment. It is important that this project is conducted in close alignment with the culture, goals, and values of the AC DHS. The AC DHS Vision Statement seeks

“To create an accessible, culturally competent, integrated, and comprehensive human services system that ensures individually tailored, seamless and holistic services to Allegheny County residents, in particular, the county’s vulnerable populations.”

We believe that the key operational word is **integrated**. AC DHS has as its core mission to seek integration across its several client-facing Offices (Intellectual Disability and Behavioral Health, Community Services, Area Agency on Aging, Children Youth and Families) to create a single, holistic entity. The central component of integration is the Executive Deputy for Integrated Program Services. We expect to work closely with Patricia Valentine across the execution of this project, which we see as being very easily shaped to meet specific needs, services, and directions to promote programmatic integration. There is a stated desire in AC DHS to increase the focus on continuous quality improvement and to bring Predictive Analytics into the service delivery equation to inform better practices and procedures. In the same vein as the initiatives to streamline program monitoring across the different oversight agencies to coordinated planning and policy development, it is important to AC DHS to have this project conducted in accordance with the focus on integration.

*Setting the Course:* The mechanism to achieve this is to work closely throughout the project with AC DHS senior leadership. This will be evident from our kick-off meeting going forward. We propose to first work with administrative/executive staff (at least one 1.5 hour planning meeting) to develop an overall CQI strategy around decision support tool development and predictive modeling. We will also seek a better understanding of the AC DHS operations environment and culture including focus, approach, timeline, components, and key participants. We will also work to identify key areas of importance for AC DHS to establish a starting point for this work to begin. These initial meetings will involve the following components:

- Discussion and development of concordance of CQI philosophy and approach within the culture of the AC DHS. While discussion will be on the development of CQI planning for decision support and tool-building, it will be imperative for Project staff (CCSI, NYU-McSilver) to understand the culture, focus, direction, and values of AC DHS.
- Developing an overall vision for the role, place, and scope of decision support within AC DHS.
  - Overall strategy to identify key areas requiring decision support
- Discussion and description of the overall process of developing predictive models which can lead to decision support.
  - Outcome criteria, predictors, developing the model, describing analysis and output, and deciding how to address bringing results to become decision support tool(s).
- Determining the type and culture of roll-out that will most likely result in success (making a game plan).
  - Underscore the need to identify one AC DHS contact person (and one back-up) with whom the project can work to properly design and implement the process
- Helping us gain a greater understanding of the data system/warehouse
  - Review of AC DHS data warehouse design and elements
  - Assessing need for new data exchange agreements or expanding existing agreements

- Identify what data are there, what data are missing, what additional data might be needed

## 5) Describe experience or approach to working with an existing IT vendor to implement/integrate solutions.

Both CCSI and NYU-McSilver have significant experience in working with IT vendors to develop, deliver, and support solutions that improve services and practice.

### Coordinated Care Services, Inc.

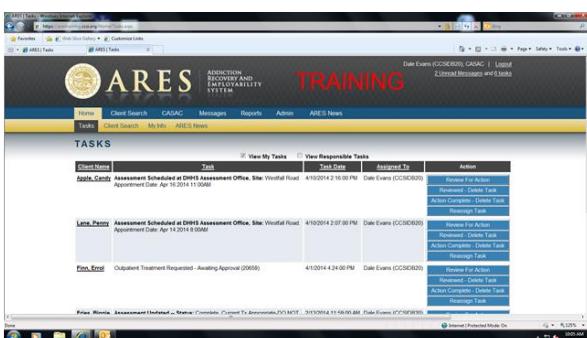
Since 2006, CCSI has partnered with Innovative Solutions, a Rochester-based IT firm that provides a full array of technology solutions and professional services to many businesses and organizations within Upstate New York, with a specific focus on the health care and not-for-profit sectors. Key service areas include website development and support, custom software development, network engineering and design, and system integration. As a key technology partner, Innovative has provided IT support for a number of priority initiatives. CCSI has worked with Innovative Solutions and other vendors around a number of software builds, two of which (PCMS and ARES) are presented below. A third was with ICF International (OBP).

- *Performance and Contract Monitoring System (PCMS):* Developed a (SQL-based) contract and performance management solution using a combination of existing software and customized development. This software is used across NYS counties to track performance deliverables in relation to targets and baselines. This is used for monitoring progress of contracts as well as data tracking for quality improvement.



- *Addiction Recovery Employability System (ARES):* CCSI designed the web-based ARES system (SQL-based) to support the Monroe County Department of Human Services in the monitoring of Temporary Assistance clients referred to chemical dependency

treatment services. Supported by CCSI for nearly a decade, ARES has been extremely helpful to the County in performing this oversight role effectively and efficiently. In addition to collecting monthly attendance reports from participating providers, ARES collects quarterly Progress Reports for clients attending outpatient treatment. This automated system allows employability decisions to be made more efficiently, thus helping clients to move more



quickly toward self-sufficiency. As Monroe County DHS moved to a task-based system of processing cases, ARES was enhanced to distill task notifications down to essential actionable tasks which alert county staff to take case actions based on poor attendance, discharges from treatment and determinations of ability to work. This efficient, real-time exchange of pertinent treatment information between ARES and DHS has contributed to a high number of client's successfully completing Chemical Dependency treatment, moving on to their next stages of self-sufficiency.

- **Outcomes-Based Prescribing (OBP):** CCSI is a partner working on the next stage of development of an award-winning innovative OBP software prototype developed by the PI for this proposal (Crilly). General information about how medications work and their side effects can be readily accessed by clinicians and patients through abundant online resources. While access to these resources is important for patients, the applicability of general medical information to the individual's own experience remains limited. This gap impedes the process of better engaging patients in decisions for their own

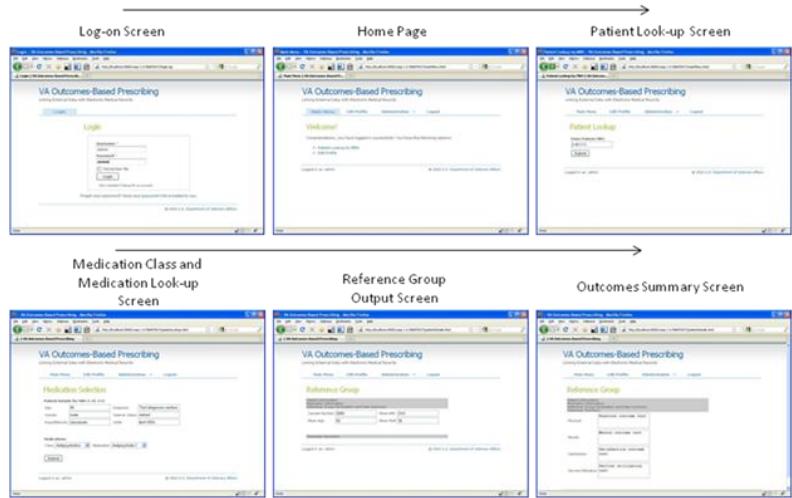
healthcare. Using a concept of Individualized Comparative Effectiveness Research, we developed a working prototype of a practical tool which draws upon enterprise electronic health record data to help patients and clinicians better predict individual outcomes when making decisions for new or additional treatments. The development of this prototype software used data drawn from the VistA electronic health record system of the US Department of Veterans Affairs. Dr. Crilly and team

worked in close collaboration with software development specialists ICF International to complete the prototype build.

### New York University (NYU) – McSilver Institute for Poverty, Policy, and Research

- NYU-McSilver was recently awarded a \$699,735 grant from the National Institute of Mental Health to collaboratively create and pilot web- and app-based homework support within child-serving agencies across New York City. Heading the development is Co-Investigator for this proposal Dr. Cleek along with collaborators Dr. Kimberly Hoagwood of the NYU School of Medicine, Dr. Anil Chacko from CUNY Queens College, Kimberly Johnson from the University of Wisconsin, Madison, and Nikolaos Kazantzis of the La Trobe University in Melbourne, Australia.
- NYU-McSilver has also been awarded a grant for over \$300K from the NYS Health Foundation to help mental health clinics throughout the state integrate outcome measures into their clinical treatment. The use of outcome measures helps inform treatment decisions, track goals, and monitor client outcomes over time, which will be vital as changes to the NYS Medicaid regulations will require providers to show improvements in client outcomes in order to be reimbursed for providing treatment services.
- NYU-McSilver is also creating a searchable database of outcome and performance measurement tools that mental health clinics can use to identify and access standardized assessments based on client characteristics and symptoms. The use of this database is intended to help clinics assess the effectiveness of treatment and for clinics

Figure 3: VAOBP Screens



- to be able to demonstrate to funders the impact of the services they deliver. By tracking clinical outcomes in a systematic way, clinics will be better able to determine the impact of different interventions and make data-driven treatment decisions.
- NYU-McSilver is developing an online portal that clinics can use to enter data, measure their progress, and benchmark themselves in a de-identified way to other clinics around in NYS. These data will allow CTAC to identify and disseminate best practices based on client characteristics and diagnoses.
  - NYU-McSilver has been involved in a number of other technology-related projects, including as a subcontractor for the Health and Hospitals Corporation ( NYC) to connect 7 community-based agencies to a NYC Regional Health Information Organization (RHIO) either through a direct connection or a portal. They also managed a HEAL-17 project for a community agency and have been involved in a process of discovery, selection, and implementation of electronic health records for a community based health home.

**B. Project Description:**

**1) Identify project goals and objectives.**

Frontline staff, managers, and executives within the AC DHS are faced with decisions daily. Some can be made based on experience and others by readily available report data. However, these options do not work for everyone, nor do they work under all conditions and for all situations. They especially do not work for the most difficult and serious decisions often required of DHS workers during the course of their jobs, such as:

- Should the child remain in the home?
- When should a child be returned from out-of-home care?
- Which clients receiving behavioral services may not be receiving services at the appropriate level of care?

Decisions are often made without having all of the necessary information (despite its being available with the agency's data system), perhaps impacted by fatigue, influenced by bias, and required to do so at a fast pace. Yet, agencies and frontline workers want to do the best job possible and are constantly searching for ways to improve. One area for improvement which can have the biggest potential impact on quality and safety across DHS programs is access to the right decision support tools at critical points in the intervention continuum. Key process steps such as clinical judgment and risk assessment can be aided by having access to key pieces of data (e.g., that a particular family has had more than 3 child protective calls this week, that one parent is in jail, and that SSI has been discontinued; that a child may be the past target of abuse by caregivers, has been arrested twice recently, and is on a series of potentially counter-indicated medications from health and mental healthcare providers).

It is important to note that AC DHS already has this level of data use which is itself a form of decision support. A recent report (GAO, 2013) showcased the usefulness of the AC DHS data warehouse in that it has increased the amount of client-level information intake workers have at their disposal. Several examples are given about how these data have helped support decision making and other important tasks across DHS (p. 40):

- Data can help identify whether reported person or another family member receives other government services (e.g., behavioral health) or has a criminal history
- Access to demographic information collected by other departments, (e.g., state Dept. of Public Welfare)

- Speeds up ability to get information on a family when limited or inaccurate information is provided at intake
- Adds material for probing in their questioning with a client who may not always be forthcoming.
- Helps manage time, such as by knowing who else is living in the house and who they need to interview before conducting a home visit.
- Ensure their own safety because they have better background information on household members before making the home visit (e.g., information on criminal history or mental health status of household members).

This decision support is used informally in that users define their own needs and it is by their own initiative that this is used. It is natural that this occurs but can make the design, use, and delivery of the decision support if offers inconsistent and haphazardly distributed.

This raises a series of complex issues around the conceptualization of the development of decision support tools. While the existence of data makes the potential of creating decision support tools possible, inadequate conceptualization of the utility of those data can actually limit its scope. With access to large amounts of data, it can be tempting for inexperienced developers to equate sheer volume of data with adequacy of content breadth. Doing so raises the risk of unintentionally narrowing or reducing the scope of discovery where the complex issues facing AC DHS could be thought to be well-addressed within those existing data alone. We will bring a more contextual view, that it is important to have a multiple-levels-of-analysis perspective when seeking solutions to very complex problems (Cicchetti and Blender, 2006). When we reach the point of considering solutions (including building new software) to bring data to the individuals who need them, it is the development of the decision support elements and the appropriate blend of involving staff and non-staff experts, research, and consumer input which promote multiple levels of analysis. This process of convening and evaluating current practice, research, organizational goals and cultures, and many other non-data, non-technical detail are critical to the proper design, implementation, and use of such tools (Foster and Stiffman, 2009). This proposal seeks to ensure that these elements are all properly in place and serves to guide the development of the eventual decision-making technology.

As we submit this proposal, we are well aware that the AC DHS is highly qualified and has many resources, but realize that those resources are already fully deployed in its day-to-day operations. As mentioned in the RFP, software builders can build software adequately but most do not have the expertise around DHS functions, process, and purpose. It is difficult and rare to do both very well. Although our group is experienced in both areas, we will focus on the important pre-build preparation and leave the software building to others. Indeed, without this piece, developers and DHS workers may not easily find the common ground upon which to exchange ideas and advisement. Keeping with the overall theme of integration across DHS departments, the goal of this proposal is to provide an iterative model of continuous quality improvement around decision support by building the capacity to develop the key components of decision support to the point of the software build. A key consideration for AC DHS will be whether a particular decision support solution to a particular problem actually requires an expensive software build. to ensure that the funding of the actual decision support tools should only be considered at the point at which it is determined that the approach or intervention currently in place, around which the decision support will be built, is optimal, clearly defined, and well understood.

Basing decisions on inadequate models (i.e., inefficient or insufficient processes or interventions) cannot provide good value to an end product, so the discussion of creating decision support tools should best occur following a reasonable process to determine the

adequacy of the current approach, adjusting it as necessary, and then, after evaluation, going forward with building decision support. Also impacting the effectiveness of a tool is the expected end result, the question of what steps should then be taken by the AC DHS worker. To get such an approach correct can take considerable time and resources. It is also important to maximize the impact of this process, which is a classic model of CQI-building. Weaving this work into a strategy of department-wide (but very focused) CQI it could produce synergistic, sustainable effects beyond the scope of this project. The **Goal** of this proposal is that through a rigorous process of ensuring clear definition of the scope of each question and the input of experts, sufficient predictor and outcome variables will be identified to build efficient predictive analytic models which will advise the development of highly relevant, high quality decision support tools. While the processes we propose here can be used to explore any of the questions listed in the RFP, we intend to focus on 2 areas identified in the RFP: A) “How can we assist workers to use the data collected on client (family) risks, strengths, and needs to target interventions (including specific evidence-based interventions)?” and B) “Which clients receiving behavioral services may not be receiving services at the appropriate level of care?” The goal of this project will be achieved within 4 objectives, activated in 2 stages.

### **Stage 1: Foundation Determination:**

This first stage will have 2 purposes: 1) to develop methods to apply discovery and rigor to the determination of areas requiring decision support, and 2) to develop methods to determine whether the current practice/AC DHS intervention is sufficient to serve as a basis for predictive modeling.

Objective 1: To work collaboratively with AC DHS to identify key areas requiring decision support and to convene staff to define their scope with the purpose of developing specific outcomes criteria around which to build predictive analytic models.

Objective 2: To identify and quantify potential predictor variables for use in predictive analytic models through content expertise and knowledge and review of the literature. This may (if necessary) also include the option of revising approaches in critical areas lacking in sufficient rigor so as to move to Stage 2.

### **Stage 2: Predictive Analytic Model Construction:**

Proceeding to Stage 2 will only occur after Stage 1 objectives have been satisfied. Stage 2 focuses exclusively on Model development for only those items shown to have sufficient internal rigor to be amenable to or able to make use of decision support tools.

Objective 3: To pull together the components created in Objectives 1 and 2 to formulate, test, and analyze predictive models and construct the basis for creating decision support tools.

Objective 4: To develop specific responses to the outcomes of the decision support. These will include processes to develop new interventions designed to achieve the desired result and recommendations around the design or development of appropriate decision support tools, which could range from simple delivered data feedback via standard business intelligence tools like Tableau or Jasper to software builds. We will then participate in and advise the product testing, product revisions, roll-out, and evaluation.

### **2) *Describe in detail the services/consultation to be provided:***

**Objective 1:** *To work collaboratively with AC DHS to identify key areas requiring decision support and to convene staff to define their scope with the purpose of developing specific outcomes criteria around which to build predictive analytic models.*

CCSI and the NYU-McSilver Institute will work collaboratively across all 4 objectives but will each have varying degrees of involvement depending on the objective. Objective 1 will primarily be the responsibility of CCSI which will convene AC DHS staff and service consumers to build this process. We will approach this from the overall philosophy of instilling continuous quality improvement (CQI) processes for the purpose of identifying areas for which decision support tools would add value to both DHS staff and clients. This is in keeping with the long-standing collaborative approach AC DHS has used to involve stakeholders since its inception (e.g., the formation by OBH of the Change Management Team in 2007 and a workgroup for using social media to combat stigma - Allegheny County Mental Health Plan, 2012: pp. 10 and 15 respectively).

As outlined above, we will first work with administrative/executive staff (at least one 1.5 hour planning meeting) to develop an overall CQI strategy and gain an understanding of the AC DHS environment including focus, approach, timeline, components, and key participants. We will also work with them to identify key areas of importance for AC DHS to establish a starting point for this work to begin.

*Primary Task: Setting Predictive Analytic Model Parameters: AC DHS Staff and Consumers Focus Group(s):* On the basis of the information gathered above, The Project team will develop well-placed focus groups aimed toward the critical areas identified within the administrative sessions. We will work with the identified AC DHS project contact person(s) to create the groups and to include a sufficiently broad spectrum of stakeholders (administrators, managers, line workers, consumers). We will hold a series of 2-5 separate focus group meetings around the identified issue. We anticipate that the first series of processes will require more involvement as we start this process but will become less necessary over time. Our intent will be to eventually “hand off” this discovery process to the AC DHS team as part of their overall decision support CQI process. During this start-up phase, the Project team will coordinate and facilitate this process. The objective of the focus groups will be to form the basis for the predictive modeling. The work of these groups will be to:

- 1) Specifically identify and clearly define the intended client target population, group, or issue of a decision support mechanism. It will be this identification which will define the scope for the predictive modeling and thus advise the direction of decision support tool.
- 2) Identify and clearly define specific outcomes (i.e., dependent variables) expected or desired from this process. This will set the target for the predictive modeling.
- 3) Determine a framework for identifying potential predictor (i.e., independent) variables for the predictive modeling based on AC DHS data, DHS best practices, practitioner experience, and consumer experience. This will also include the determination of the sample size of the target group/issue as a parameter for the next steps. This framework formulates the starting point for the work of Objective 2.
- 4) Establish concordance between NYU-McSilver and CCSI on these components so that the NYU-McSilver team can immediately launch the next stage of work.

**Objective 2:** *To identify and quantify potential predictor variables for use in predictive analytic models through content expertise and knowledge and review of the literature.*

Determining predictive analytic model components will fall under the purview of NYU-McSilver Institute. CCSI will participate by facilitating the crosswalk between the qualitative data from the focus groups to NYU-McSilver which will lead the development and refinement of the predictor variable set of the predictive analytic model(s). They will start with the input from the focus groups and will add the critical factor of providing a broader reach for informed input. The choice of predictor variables must be based on policies, best practices, clinical expertise, and continuous review and integration of literature findings and resources. Variables must be posed in ways that are clear and will result in productive and useful information. Their level of clarity will produce the best possible decisions. NYU-McSilver Institute has extensive knowledge expertise and is well-positioned to provide rapid turn-around of thorough literature reviews and after the infusion of expertise and knowledge of both adult and child populations typically involved with DHS. They have extensive experience working within DHS topic areas, particularly in the areas of poverty and child welfare. The Institute is closely aligned with the NYU School of Social Work and has access to a large group of faculty expertise and field placement agencies which could be tapped for additional perspective.

NYU-McSilver will be involved as an observer in the focus groups outlined in Objective 1 so will have good context for the task of identifying and qualifying predictive values. With the list of proposed variables as their guide, they will initiate the following:

- 1) Assemble a small team of advisors (NYU-McSilver faculty, NYU Social Work Department faculty, field agency staff) and NYU-McSilver staff who will scope out the work process.
- 2) NYU-McSilver staff will scour the practice, policy, and research literature to identify a field of potential predictor components. Identified components must be evidence-based or best-practice and will be compiled into a growing database of potential elements complete with reference, keywords, and particular potential prediction scope.
- 3) NYU-McSilver staff will meet in frequently (e.g., twice-weekly) discussion sessions headed by the NYU-McSilver project lead and include select advisors to confirm variables to be kept or rejected until a consensus is reached that the field of potential variables is exhausted. The purpose of this will be to develop a database of vetted predictor variables that can be handed off to AC DHS to utilize over time in subsequent predictor analytics projects. Unlike a static list of potential variables collected and presented in a published paper (e.g., Begle et al., 2010), this will be a dynamic process which will require periodic updating, but will form an excellent foundation for developing predictive analytic models.
- 4) When this process is complete, CCSI will bring the final list of proposed predictor variables back to the focus group to confirm that it is ready for the predictive analysis stage.

Although Allegheny County has ongoing methodology training and competence oversight, one of the key components of a CQI process is the determination of areas needing improvement. Although unlikely, we may find that in the process of completing Objectives 1 & 2 that the intervention or process currently in place does not have a basis in the literature, and therefore should not yet be the basis of a decision support initiative. This would present an opportunity for the organization to review high priority areas for improvement.

**Objective 3:** *To pull together the components created in Objectives 1 and 2 to formulate, test, and analyze predictive models and construct the basis for creating decision support tools.*

Predictive modeling (PM) seeks to offer information to groups of “information consumers” to help them in planning and making decisions. PM can form the basis of a robust decision support system both for DHS workers on the front lines of care as well as for managers and administrators. In a broader context, decision support systems have become standard issue with many large electronic health records and are common in business to help manage investing, marketing, and risk. As such, output types can be quite variable. Some decision support features can be as simple as auto-alerts in a health record or more complex as helping DHS social workers estimate the success of specific children placed in specific residential or supervised setting. Properly understanding methods for their development and use and how to apply their output is critical to the entire process. We discuss this below and describe the choices of methods available to match to different needs and settings.

#### *Discussion of Predictive Modeling Methods*

There can be a tendency when approaching complex problems such as those seen in child welfare agencies to use methods that seem to make sense but are not fully adequate. For example, we may assume that the number of risk factors present accumulates to create a crushing load on an individual or group, thus explaining the existence and severity of a particular outcome – the concept of cumulative risk. While risk factors are important, assuming that the amount accumulation of these factors can therefore form a predictive model can be too simplistic for some applications. Similarly, predictive modeling is sometimes considered a form of logistic regression, where a series of independent variables are assessed for their influence on one or more outcome or dependent variables. While the interpretation of the  $R^2$  value as a predictive value is often seen in the literature (e.g., Jarvenpaa et al., 2004; Rai et al., 2006), this statistic represents “variance explained,” a strength-of-fit measure which is a different construct than prediction. High  $R^2$  could indicate a strong relationship amongst data yet still have low predictive value (Barrett, 1974). Instead, predictive modeling methods include a series of steps to build the model. Parts of the model are predicated on statistical significance while others are not. For example, unlike the building of regression models which are generally built upon variables which have statistical significance, predictive modeling can gain information and value from variables that are not statistically significant (i.e., it is their significance – or not – which can have predictive value). These less *experimental* and more *observational* data can be more useful for prediction because they are freer to vary and therefore more closely resemble real-life situations and outcomes.

Predictive modeling follows a number of steps. The first step is identifying the goal of the particular analysis. Predictive modeling is generally intended to promote the ability to predict outcomes for new sets of observations based on responses to past values (*predictions* if numeric outcomes, *classifications* if categorical outcomes). In AC DHS, the majority of data for use in predictive modeling already exist in the extensive data warehouse. Depending on the analytic question, outside data may also be required to add dimensions to the existing data. Once the goal is identified, the next step is to determine expected or desired outcomes (Objective 1). This is an important step because the more succinctly these can be defined, the more closely the data can be modeled to fit (or not). This step typically includes stratification of outcome types or dichotomization of several potential outcomes. Bi-modal predictions, that is, predicting which cases fall in the positive spectrum (excellent outcome, top performers) vs. those in the negative spectrum (very poor outcome, lowest performers) can be equally useful.

With our outcomes defined, we then switch to determining the best independent variables to help shape the model (Objective 2). This is best done by drawing on subject matter expertise, field experience, and full access to and ability to use a broad base of literature. This process is highly interactive and requires coordination, efficiency, and clarity of purpose to reach the level of usefulness that will lead to quality predictive modelling. Consideration of independent variables also depends on dataset characteristics. Generally, we need to ensure that there are sufficient cases to provide sufficient predictive power AND that we keep the number of predictive variables to a minimum to prevent “over-fitting” the model. In general, the number of outcome events should be at least ten times the number of variables in the model and the number of cases per variable should (generally) not be less than  $n=75$ . Missing data are also an important consideration in two ways: 1) we can eliminate missing values by imputing data, or 2) we can transform missing data into data itself – that data are missing from a specific variable may be important predictive information and added to the potential independent variable list. Understanding the database provides important perspective for determining variables.

Once the outcomes and predictor variables are finalized, we then determine the sample group to study. AC DHS’s large dataset is ideal for designing cohort comparisons. Ideally, we could base the predictive model on the entire group of individuals affected by a particular decision support element. In this case of what we presume to be AC DHS’ sufficiently large population, we instead would use a split-sample design and create two randomly-assigned cohorts: the derivation (sometimes called “training” or “model”) cohort and the validation (sometimes called “hold out”) cohort. The derivation cohort is generally two-thirds of the larger group and it is the cohort upon which the model is developed and refined. The remaining one-third is the validation cohort, where the models’ prediction abilities are estimated.

In working with the validation cohort, the object is to find the best set of model components. We generally start out (using the derivation cohort) by determining at least one model for every condition. For example, if we had 2 outcome measures (A and B) and 3 levels of outcome (excellent, moderate, poor) we would identify at least 1 model for each of the combinations (A/Excellent, B/Excellent, A/Moderate, etc.) for a total of 6 models. Models should be able to include both linear and nonlinear variables and there are statistical methods to help control assumptions (e.g., restricted cubic splines can help avoid linearity assumptions) when using dichotomous and continuous data. At that point, it is important to determine the discrimination of the model – that is, its ability to discriminate between cases/events and non-cases/non-events. To achieve this, we use the receiver operator characteristic (ROC) curve, a standard measure of overall predictive discrimination. We look for a c-statistic (range of 0-1.0) at the very least above 0.50 but generally prefer closer to 0.75 (moderately good discrimination) or higher. Depending on the type and quality of both the independent and outcome variables, we may also perform calibration of the model, and use the standard Hosmer-Lemeshow statistic to determine a particular model’s fit to the data. Such capabilities are standard in statistical packages such as Stata, SAS, R, and SPSS.

Alternatively, we could develop the model on the entire group (no split-sample design) for the purpose of determining how well a model might predict in a new population sample. To do this, we would perform an internal validation procedure using bootstrapping techniques

(Efron and Gong, 1983). Briefly, bootstrapping allows us to generate multiple random samples from the same dataset and test how well (consistently) the model predicts the outcome. The bootstrap-corrected data are then ROC-analyzed. This approach is generally used for smaller samples in which using the split-sample design would decrease the available n and thereby limit the number of independent variables to be used and would likely contain insufficient outcome events in either group for prediction.

Another form of predictive modeling involves artificial neural networks (ANN), most notably in child welfare by Zandi (2000) and Schwartz et al. (2004). Briefly, ANN is systems of computer-based learning capacity which, among other things, is able to identify patterns within sets of data. This is accomplished through a series of algorithms which infer functions from observational data. This is particularly useful in complex situations where the integration of all data “by hand” is very difficult yet is imperative in making a correct decision. Zandi (2000), Schwartz et al. (2004) and others have identified the decision making required by child welfare workers to be of this caliber of complexity. Schwartz et al. (2004) reported that ANN methods successfully categorized 89.6% of cases of child abuse in their study with small (0.6%, 1.9%) false positives and negatives. Zandi (2000) had similar results (90% classified) but with a higher false positive/negative rate. The challenge of ANN is the high level of expertise required to design, implement properly, and maintain the system. However, this type of “data mining” can have considerable application potential within a child welfare system, especially with the data capacities of the AC DHS data warehouse.

#### *Alternative/Emerging Predictive Modelling Techniques:*

There are other forms of predictive modeling which are emerging in the literature, catalyzed by the ready availability of large datasets of human experience data and the conceptualization of consumer self-determination and personalized medicine. Two are worth noting here, one of which was designed by the lead applicant. The first is from Alemi et al. (2009), who suggest new statistical methods to examine whether the treatment (or approach) to a particular consumer is likely to be beneficial. They recommend the use of the “k-nearest neighbor” statistic to determine the extent to which the recommended treatment was effective in consumers “similar” to the index individual. Going a step further, Crilly and Luu (in press, also included in Appendix) developed a model for utilizing data from a large electronic health record for patients similar to the individual index patient by diagnosis and on a number of descriptive (e.g., geographic location) and treatment criteria. These are important concepts which seek to minimize the likelihood of “bad” choices of care or intervention because they use a broad array of available information which can be applied to predicting the outcomes of a particular case. Having these different types of Predictive modeling methods in our toolkit can add value to the final decision support tool design.

#### *Which to Choose?*

This will be the key question AC DHS will face with this project. The process of predictive modeling will set the stage for choosing amongst a series of decision support tools and delivery methods. However, which tools, modeling approach, and delivery methods will work best? This will likely depend on the specific question and the intended target and use, so it is important to have a flexible and well-informed endpoint. To address this, CCSI and NYU-McSilver will again convene a group of users similar to the focus group structure outlined in

Objective 1 to examine the potential types of decision support solutions which would be appropriate (data dashboard, software build, off-the-shelf decision support software [e.g., TreeAge, Precision Tree], text message alert, information clip, or other mechanisms).

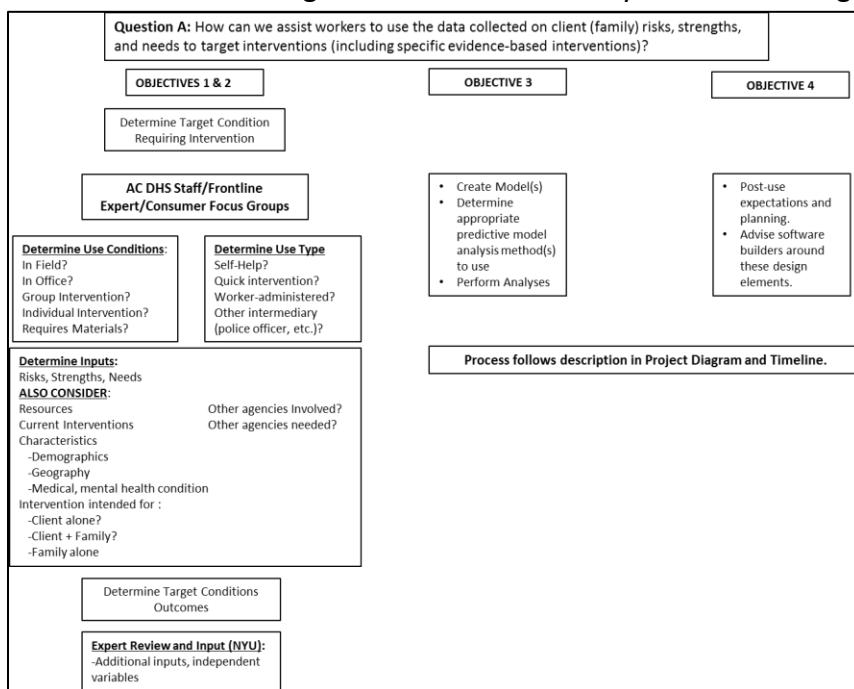
**Objective 4: *To develop specific responses to the outcomes of the decision support solution.***

Regardless of the choice of decision support solution delivery, the intent is that it should influence a decision and, subsequently, outcome. Users of decision support need to understand what type of response or reaction is expected of them once the support has been used (e.g., go with recommendation, consult with colleagues, check with supervisor, or integrate into their own judgment). This, of course, is not the intent because human judgment backed by experience and knowledge of the components on the ground remain critical components. It is also a risk that workers will not use the tools. This can occur for any number of reasons, but the most likely will be because they did not feel a part of the process of development or were not consulted. The perception of “ownership” is powerful (Thurskya and Mahemoffb, 2007). Users may also try the tool only once, find that they don’t understand it (or it doesn’t fit the need, or it returns an obvious response) and stop its use, or just never try it at all. Therefore, within this Objective we must address a) actual use of the tool by the target group, and b) determining the optimal expected response after delivery of the solution to the recipient. Just to clarify, this objective is not intended to replace the participatory design/user interface development step which would naturally be completed by the solution developer. However, it does bring together and integrates the voice of the consumer into this critical stage of the process and would be a strong and important partner in this process.

*Actual Use (Uptake) of Tool & Post-Use Expectations (a & b above):* As Moxey et al. (2010) describe, simply providing a tool, no matter how useful, does not result in uptake by the intended users. Workers can resent being directed to do certain tasks around something that is new without having input. Therefore, our approach to addressing both of these issues will be engaging the right staff at the right level. This fits directly with how Allegheny County traditionally elicits feedback from its stakeholders (e.g., through year-round input and participation in committees, work groups, panels, public meetings, surveys, data collection activities advocacy groups, stakeholder-specific groups, and other ways of communicating ongoing feedback to the County, such as the Children’s Cabinet [Allegheny County Mental Health Plan, 2012: p. 4; Children’s Integrated Service Plan, p. 2]). This process is much the same as described in Objective 1 and the process at the end of Objective 3. However, by this point in the process we will become much more familiar with the AC DHS data, players, and the playing field. Because of this, we may or may not necessarily need focus groups for discussions in all circumstances but could solicit feedback through electronic surveys. This format could occur one time, but would actually be the start of a process. After receiving feedback from the first survey, we would build out a potential prototype mock-up using graphics or business intelligence software (e.g., Tableau) and put out results for votes and feedback. Depending on the environment, we may suggest something to engage staff such as running a contest for best design suggestion. This would bind people to the project on multiple levels while preparing/priming them for the real build which will follow. Part of the intent will be to build excitement and anticipation around the tool to enhance the uptake potential.

Post-use expectations (of AC DHS) for users of the decision support tool(s) will be tied in to what the users (themselves) are expecting. Users will want value. The organization will want results. While these goals are ultimately compatible, they must achieve sufficient concordance to achieve the outcomes desired by all. We will pull together a design (not focus) group of frontline workers and administrators who will develop a set of common expectations of how the tool should be used and how users should react to the decision support presented. We will use these suggestions to work with the software/tool developers to include in the design as, at least, a starting point.

**Use Scenarios:** We intend to focus on developing responses to the following 2 questions: A) “How can we assist workers to use the data collected on client (family) risks, strengths, and needs to target interventions (including specific evidence-based interventions)?”, and B) “Which clients receiving behavioral services may not be receiving services at the appropriate

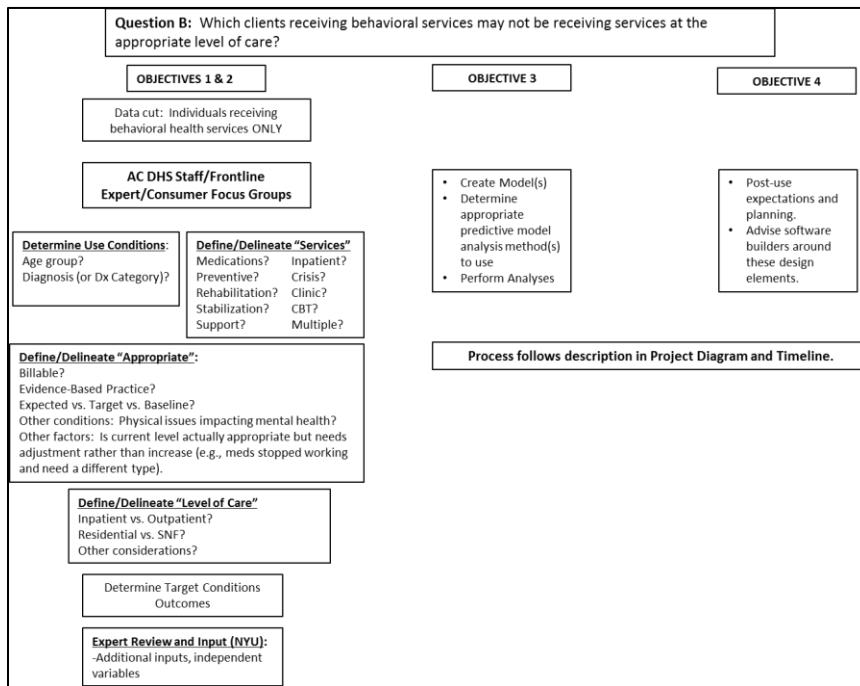


level of care?” The figure at left demonstrates the discovery process necessary to examine the nuances of this question. Starting with Objectives 1 & 2, the immediate issue is to determine the target condition which will be the object of the target intervention. There are then the questions of the use condition(s) (could be one, some, or all) and the types of intervention styles (discussion of delivery methods would occur later via Objective 4). Data

inputs would be considered next and would involve the Risks, Strengths, and Needs noted in the original question but also a host of other mediating factors that would determine: the “dose” of the intervention, whether to factor in the influence or contribution of other agencies, whether the client is receiving additional services now which would continue along with the intervention, and more. Outcomes would be defined at the outset of this process but revisited at the end so that the intent and focus remain consistent. This entire process just described would occur via focus group discussion and then distillation and analyses of qualitative data. The results of these analyses would prompt the start of the work of NYU to begin the Expert Review and Input phase. Once complete, we would determine which method of predictive modeling would be most appropriate for these data (Objective 3) and this situation and then conduct those analyses. We would then return the results and interpretation of the analyses to the focus group for review and validation as well as determining the types of output recommended and the action expected from accessing the data (Objective 4). We would use

this information to work with the software developers to shape their product build, in particular the delivery venue and considerations around output.

The second question would follow an identical process, but the factors within Objectives 1 & 2 would be different. As shown in the figure for Question B below, while the process is



similar to that outlined for Question A, the work would be very different. The question posed here requires a definition for every key word. Those definitions would be based on the intent of the purpose, such as incidence vs. prevalence (e.g., is this for someone who has been involved in the system and is showing an increase in symptoms? Is this from a static review of warehouse data to flag individuals for follow-up? etc.). The focus group may find that the

true intent actually requires a different question which could then change all of these inputs. Following finalization of these processes, the process flow would return to that outlined for Objectives 3 and 4.

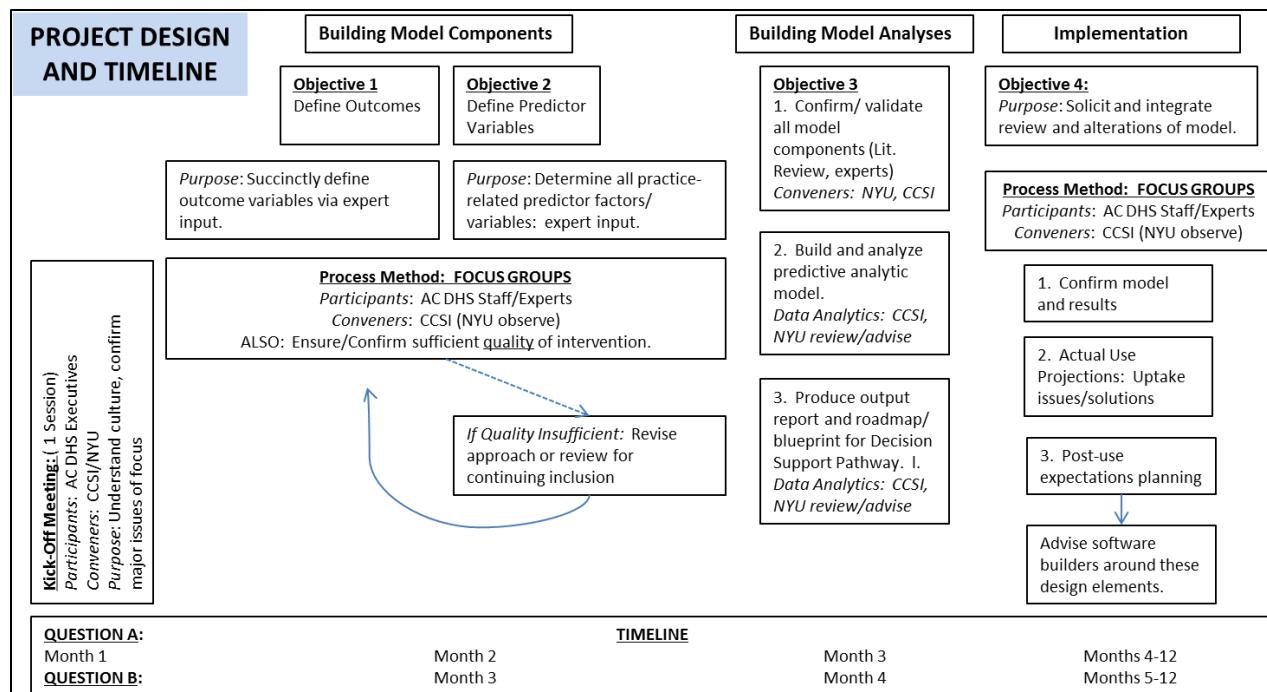
### **3. Describe how the program will be integrated with other information technology and tools:**

It will be imperative that all participants regardless of role are familiar with the AC DHS Data Warehouse. The Data Warehouse is expansive, containing 650 million records on nearly 1 million individuals. It holds data from 29 internal programs within the large program categories and is also actively involved in a number of collaborations with external sources, such as city schools and the US Department of Census. AC DHS also has several targeted processes of collecting data through software applications. All of these sources can contribute elements to predictive modeling and will be integrated into the discovery process. When building an application such as one intended to support decision-making, the most basic element is to ensure that the targeted data are available to use. The data in AC DHS reside in the data warehouse, which generally operates as the name implies: it warehouses data as its inventory. The “inventory” can be accessed by knowing where the specific required data are in the warehouse and how to reach them. The AC DHS data warehouse is built on a structured query language (SQL), Oracle platform. Accessing the data through the simplest means might be to construct SQL queries. One or many data subset(s) for use in predictive modeling or, later, for decision support, can be extracted using SQL queries. These can be automated to run at a certain time of day at a certain frequency making the data available for the tool without a drag on the system operation, generally taking place on a dedicated server. This type of approach

would be compatible with the AC DHS warehouse. Of course this simple way is only one of many that could be used to perform similar data retrieval.

A software build would access the data, but would have a series of rules and reporting layers depending on the mechanism. One such use scenario is presented in the last section of Appendix A for OBP. There we used Presentation, Persistence, Data Injection, Business Logic, and Build layers. The Presentation layer used JSF to display the data via a web browser. The Persistence layer used Hibernate configuration files to map Java objects. We used backing beans for data calls and added our own business rules constructed from the literature and expert input and used Maven for the build. Here we assume that the tool would operate outside of the current system but could be called in at certain points automatically or offered as an option via a prompt. Regardless of the scenario, it would be important for the software builder to work with our team to do a thorough audit of the AC DHS system capabilities and understand the intended receiver of the decision support tool. One such (obvious) example would be whether the output would need to be seen in just a mobile format or must be scalable to a number of different output venues.

#### 4) Provide a timeline for design and development:



We present a diagram of the proposed project roadmap and timeline. CCS/ plans to begin with the kick-off meeting to start the project at the beginning of Month 1. CCS/ will then spend that month formulating our planning and working with our AC DHS contact staff to arrange the focus groups necessary to address Objective 1 for Question A. CCS/ will spend Month 2 running the focus groups and preparing and analyzing the qualitative data for use by NYU which will start its refinement process immediately. During Month 3, NYU will finish its work and both CCS/ and NYU will finalize the predictive model structure, determine the appropriate analyses methods, conduct the analyses, and interpret the results to bring back to the focus group for confirmation. The work of Objective 4 work will begin immediately as we engage with the

software design/build group(s), which will continue for the remainder of the year. We will stagger the approach to Question B by one month in order to allow time for the work on Question A to progress. We acknowledge that there is substantial activity in the beginning months. The reason we are pushing hard early is to allow enough time for us to get this important design information to the software build group(s) so that they may have a completed project by year-end, as required in the RFP.

Sustainability:

The actual process of determining potential areas for decision support and narrowing down to clearly defined elements has all of the features of a CQI process, to which ideally this project will contribute for AC DHS. The quality of the features recommended through the focus group process should add sufficient value to the final software product that it will enhance its marketability and applicability to other counties and large provider organizations.

**5) Provide examples of tools/systems already developed:**

We present examples of three systems already described in above sections: a) Performance and Contract Management System (PCMS), b) Addiction Recovery Employability System (ARES), and c) Outcomes-Based Prescribing (OBP). Detail is provided in Appendix A.

**6) Describe the staffing plan.** (Aligns with project plan description above and Budget Narrative)

**For CCSI:** John F. Crilly, PhD, MPH, MSW: Principal Investigator, will oversee all aspects of the project and will design the predictive models, analyses, and interpretation.

TBD: Project Coordinator: Will work directly with AC-DHS staff to construct and conduct all focus groups, will assist with analysis of qualitative data, and will be responsible for timeline.

TBD: Data Analyst: Will run all analyses in the designated software packages.

**For NYU:** Andrew F. Cleek, PsyD: Co-investigator, will oversee all aspects of the project at NYU and work in close collaboration with Dr. Crilly around predictive model design and analyses. He will be aided by Micaela Mercado, PhD who will lead the Expert Input process. The NYU project will be coordinated by Ashley Fuss, MSW who will interact closely with CCSI and AC DHS, including involvement in AC DHS focus groups.

**REFERENCES**

CCSI	NYU-McSilver
David Putney, MA, CASCAC, Director Monroe Co. Office of Mental Health (585) 753-6047, <a href="mailto:dputney@monreocounty.gov">dputney@monreocounty.gov</a>	Elisa Chow, PhD, LMSW Independent Community Living, Director 212.385.3030 ext 16005, <a href="mailto:echow@iclinc.org">echow@iclinc.org</a>
Ellery Reaves, MPA, Commissioner Erie and Genesee Co. Dept. Mental Health (716) 858-8531. <a href="mailto:Ellery.Reaves@erie.gov">Ellery.Reaves@erie.gov</a>	Wendy Brennan Executive Director, NAMI-NYC Metro 212.684.3365, <a href="mailto:wbrennan@naminy.org">wbrennan@naminy.org</a>
Arthur R. Johnson, LCSW, Commissioner Broome Co. Social Services and Mental Health (607)778-2600, <a href="mailto:ajohnson@co.broome.ny.us">ajohnson@co.broome.ny.us</a>	Marty Forth, LMSW Senior Executive, YMCA of Greater New York 212-630-9647, <a href="mailto:mforth@ymcanyc.org">mforth@ymcanyc.org</a>

### 3. BUDGET AND BUDGET DESCRIPTION

#### Budget

<b>County of Allegheny, Pennsylvania</b>								
<b>Department of Human Services</b>								
<b>Decision Support Tools and Predictive Analyses</b>								
<hr/>								
<b>3. Budget (excel) and Budget Description (word)</b>								
<u>Line</u>								
<u>Item</u>	<b>Budget Revenue</b>				<u>Extended Price</u>			
1	Anticipated revenues including any matching funds				\$ -			
	<b>Total Revenue</b>				\$ -			
<u>Line</u>								
<u>Item</u>	<b>Budget Expense</b>							
2	Personal services and associated agency costs							
	<u>Agency</u>	<u>Position Title</u>	<u>Employee Name</u>	<u>Fully Loaded Compensation</u>	<u>FTE</u>			
	CCSI	Principle Investigator	John Crilly, PhD, MPH, MSW	\$ [REDACTED]	0.25			
	NYU	Co - Investigator	Andrew F. Cleek, Psy.D.	\$ [REDACTED]	0.15			
	NYU	Project Coordinator	Ashley Fuss, MSW	\$ [REDACTED]	0.60			
	CCSI	Project Coordinator	To Be Named	\$ [REDACTED]	0.50			
	NYU	Evaluation Staff	Micaela Mercado, Ph.D.	\$ [REDACTED]	0.20			
	CCSI	Data Analyst	To Be Named	\$ [REDACTED]	0.75			
	Subtotal Personal services and associated agency costs				\$ [REDACTED]			
3	Travel and associated costs							
	Mileage and related ground transportation expenses				\$ [REDACTED]			
	Per Diem Hotel and Meal related expenses				\$ [REDACTED]			
	Subtotal Travel and associated transportation costs				\$ [REDACTED]			
	<b>Total Expense</b>				\$ [REDACTED]			
<hr/>								
<b>Total Funding Requested</b>					\$ [REDACTED]			

#### Budget Narrative/Description

1. There are no anticipated revenues as shown in Line Item 1 – Budget Revenue.
2. Line Item 2 outlines budget expenses including personal services and associated agency costs. There will be three staff from Coordinated Care Services, Inc. (CCSI) included on the project and three from NYU-McSilver, described as follows:
  - John Crilly, PhD, MPH, MSW: Principle Investigator. Dr. Crilly's role will be to oversee the entire project. Although he will work closely with Dr. Cleek in these areas, he will be responsible for overseeing the analysis of qualitative data, development and analyses of the

predictive model, and all interpretations resulting therefrom. He will be on site to participate in the focus and design groups and assist in the cross-walk collaborations both with NYU and the software developers.

TBD: Project Coordinator. The CCSI Project Coordinator will be a Masters-trained, senior-level CCSI employee who has experience in the arenas of direct care, program evaluation, and research with a strong understanding of data and technology. This PC will be responsible for interactions with AC DHS staff to plan logistics in the AC DHS environment and develop and implement focus groups. This PC will run all focus groups and will be responsible for the recording and analysis of the qualitative data in conjunction with Dr. Crilly. This PC will be responsible for maintaining project adherence to the timeline.

TBD: Data Analyst. The data analyst will be a Masters-trained Sr. Programmer/Analyst who will be proficient in the statistical software and analyses methods necessary to conduct the work in this proposal. This will include SPSS, SAS, Stata, R, and Atlas (qualitative data analysis software).

NYU-McSilver staff will include:

- Andrew Cleek, PsyD: Co-Investigator. Dr. Cleek's role will be to oversee the Project as it occurs at the NYU-McSilver site. Dr. Cleek will assist in gathering experts for input into the predictor and outcome variable designations and expediting the process. He will collaborate with Dr. Crilly in the development, analysis, and interpretation of the predictive models. He will also assure smooth transitions of processes requiring crosswalks between NYU-McSilver and CCSI, AC DHS, and software developers with Dr. Crilly.
- Micaela Mercado, PhD, LMSW: Evaluation Staff. Dr. Mercado will facilitate and oversee the operation of the Predictor/Outcome variable determination at NYU. Working with Dr. Cleek, she will design the appropriate group formats and recruit panels of experts to provide input into the features of Questions A and B in this proposal.
- Ashley Fuss, MSW: Project Coordinator. Ms. Fuss will be responsible for the operation of the project for NYU-McSilver. She will work closely with CCSI and AC DHS and will coordinate all aspects of the project at NYU-McSilver. She will be responsible for ensuring adherence to the timeline. She will also be involved as a note-taking participant in the AC DHS focus groups to ensure an adequate link between the work conducted by Dr. Mercado and the input provided by the focus group members.

3. Each staff member is individually listed with their fully loaded compensation rate which includes costs associated with project time, agency administrative time, vacation and holiday time including mandated and non-mandated benefits as well as any associated office supplies, office equipment, infrastructure and agency administration and overhead.

4. An estimation of their time required for this project is listed under the FTE column, which is the Full Time Equivalent based on a 40 hour work week. Work tasks included in this estimation are outlined above.

5. The Extended Price column is calculated by multiplying the fully loaded compensation rate by the FTE. The Line Item 2 Subtotal is [REDACTED]

6. Line Item 3 summarizes travel and associated costs. Mileage and related ground transportation expenses are calculated along with per diem hotel and meal related expenses. It is anticipated that the Principal and Co-Investigator will travel to Allegheny County on a bi-monthly basis, 2.5 days per trip. Trip duties will include attending focus group meetings, meetings and consultation with AC DHS staff, ensuring overall operation of the project and, later, meeting with software developers. The CCSI and NYU Coordinators will have a total of 14 trips, 2.5 days per trip, to be distributed throughout the year as needed for conducting focus groups and attending meetings with AC DHS staff at all levels. Mileage was calculated using round trip miles and \$0.56/per mile mileage reimbursement. The [US General Services Administration](#) figures were used to calculate per diem travel costs. Greater detail for each staff member is listed below. The Line Item 3 Subtotal is [REDACTED]

<b>Mileage and other travel</b>	<b>Total</b>
1 staff NYU: 14 trips for 2.5 days each	\$ [REDACTED]
Co-Inv NYU: 1 time bi-monthly for 2.5 days	\$ [REDACTED]
1 staff CCSI : 14 trips for 2.5 days each	\$ [REDACTED]
Princ Inv CCSI: 1 time bi-monthly for 2.5 days	\$ [REDACTED]
<b>Total Mileage and other travel</b>	<b>\$ [REDACTED]</b>

<b>Hotel, meals, etc.</b>	<b>Total</b>
1 staff NYU: 14 trips for 2.5 days, 2.5 nights	\$ [REDACTED]
Co-Inv NYU: 1 time bi-monthly for 2.5 days	\$ [REDACTED]
1 staff CCSI : 14 trips for 2.5 days, 2.5 nights	\$ [REDACTED]
Princ Inv CCSI: 1 time bi-monthly for 2.5 days	\$ [REDACTED]
<b>Total Hotel, meals, etc.</b>	<b>\$ [REDACTED]</b>

## APPENDIX A

### A. Performance and Contract Management System (PCMS)



#### Contract Management System

**A Web-based tool for oversight organizations to manage service contracts and establish performance accountability and evaluation**

Feature	Benefit
Web-based application	<ul style="list-style-type: none"> <li>Minimize hardware for easy access</li> <li>Eliminate need for cumbersome local updates with upgrades on a central server</li> </ul>
Provider portal ~ Home page summary view	<ul style="list-style-type: none"> <li>See status of contracts at a glance</li> <li>View a quick list of delinquent events and deliverables</li> <li>Manage to-do lists</li> <li>Link to standard reports</li> <li>Link to data collection forms</li> <li>Collaborate on documents and spreadsheets with shared folders</li> </ul>
Contract Tree summary view	<ul style="list-style-type: none"> <li>See all program- and service-level events and deliverables in one view</li> <li>Drill down to the details of each linked item with one click</li> <li>See contract information related to critical dates and funding</li> </ul>
Shared contract view for oversight agency and providers	<ul style="list-style-type: none"> <li>Create efficiencies by eliminating questions about contract status and details</li> </ul>
User-friendly functions to create multiple contract structures and requirement sets	<ul style="list-style-type: none"> <li>Set up contracts, deliverables, and events efficiently and logically</li> <li>Create customized contract templates</li> <li>Create and define unlimited data collection fields</li> <li>Renew contracts easily</li> </ul>
Workflow management (partially developed)	<ul style="list-style-type: none"> <li>Track internal processes pertaining to contract life cycle</li> </ul>
Automatic audit trail	<ul style="list-style-type: none"> <li>Automatically track changes for internal and external accountability</li> </ul>
Automatic e-mail reminders (in development)	<ul style="list-style-type: none"> <li>Take the burden out of remembering to take action on events and deliverables</li> <li>Allow customization of e-mail text as well as definition of conditions and timing for distribution</li> </ul>
Note fields	<ul style="list-style-type: none"> <li>Allow "in-system" communication between users regarding specific deliverables or contract components</li> </ul>
Performance data capture	<ul style="list-style-type: none"> <li>Provide an easily accessible way for any provider to submit data</li> <li>Collect data in a more usable format than paper reporting</li> <li>Provide the opportunity to standardize performance</li> </ul>

	<ul style="list-style-type: none"> <li>measures among users</li> <li>Serve as a data store, allowing providers access to their data</li> </ul>
Data warehouse – ad hoc reporting capabilities	<ul style="list-style-type: none"> <li>Allow unlimited analyses with Web-based query and reporting tools</li> <li>Isolate data for analysis of a specific element across services</li> <li>Isolate multiple data elements for analyses from a single provider</li> <li>Create and save common formats for easy periodic reporting</li> <li>Extract data to spreadsheet for additional analysis, benchmarking, graphical display, etc.</li> </ul>

**Screen shots of PCMS are as follows:**

Sign-In Screen



Work Screens (following page):

## PERFORMANCE AND CONTRACT MANAGEMENT SYSTEM

Hello, Sarah Moravan | [Logout](#)

[Return to Main Menu](#)

[Reset](#)

Past Due(104)

Waiting Approval(25)

Future

Due(134)

Deliverable Description:

For 30 days

[<All Deliverable Types>](#)

### AGENCIES

	Agency Name	#Past Due	#Waiting Approval	#Future Due
Select	ADDS FOUNDATION/ RENAISSANCE ADDICTION SERVICES, INC.	0	0	1
Select	ALCOHOL AND DRUG DEPENDENCY SERVICES INC	9	0	1
Select	BUFFALO FEDERATION OF NEIGHBORHOOD CTR, INC.	0	0	5
Select	CATHOLIC CHARITIES OF WNY	0	0	2
Select	CAZENOVIA RECOVERY SYSTEMS, INC.	0	0	9
Select	CHILD AND ADOLESCENT TREATMENT SERVICES	2	3	0
Select	CHILD AND FAMILY SERVICES	1	1	1
Select	COMMUNITY CONNECTIONS OF NEW YORK	3	0	10
Select	COMMUNITY SERVICES FOR THE DEVELOPMENTALLY DISABLED	0	0	1
Select	COMPEER WEST	0	0	3
Select	ERIE COUNTY COUNCIL FOR THE PREVENTION OF ALCOHOL AND SUBSTANCE ABUSE (ECCPASA)	6	0	6
Select	ERIE COUNTY DEPARTMENT OF SENIOR SERVICES	0	0	0
Select	ERIE COUNTY MEDICAL CENTER	3	0	2
Select	ERIE COUNTY SHERIFF'S OFFICE - PUBLIC AWARENESS IS PREVENTION	1	0	0
Select	EVERY PERSON INFLUENCES CHILDREN, INC (EPIC)	1	0	1
Select	FAMILIES CHILD ADVOCACY NETWORK	0	0	0
Select	FAMILY HELP CENTER	0	0	1
Select	GATEWAY - LONGVIEW	0	0	2
Select	HERITAGE CENTER (ARC ERIE)	0	0	2
Select	HOPES OF BUFFALO	0	1	0
Select	HORIZON HEALTH SVC, INC	0	0	5
Select	HORIZON VILLAGE, INC.	0	0	2
Select	HOUSING OPTIONS MADE EASY, INC.	0	0	2
Select	JEWISH FAMILY SERVICES OF ERIE	0	0	3
Select	LAKE SHORE BEHAVIORAL HEALTH, INC.	0	0	11
Select	LIVING OPPORTUNITIES OF DEPAUL	0	2	4
Select	MENTAL HEALTH ASSOCIATION OF ERIE COUNTY	1	3	3
Select	MID-ERIE COUNSELING AND TREATMENT SERVICES	0	1	4
Select	MONSIGNOR CARR INSTITUTE	0	0	0
Select	NATIVE AMERICAN COMMUNITY SERVICES	5	0	2
Select	NEW DIRECTIONS YOUTH AND FAMILY SERVICES	0	1	0

## PERFORMANCE AND CONTRACT MANAGEMENT SYSTEM

Hello, Sarah Moravan | [Logout](#)

[Return to Agency List](#)

[Filter:](#)

Year: [<All>](#)

Description: [<All Deliverable Types>](#)

[Reset](#)

Site: [<All>](#)

Status: [<All - Unfiltered List>](#)

### DELIVERABLES

	Contract Year	Agency Site	Past Due: 0	Waiting Approval: 0	Future Due: 1
Select	2014	Renaissance Campus	0355105000	2014 Performance Baselines and Targets	Approved (02/20/2014) 12/15/2013
Select	2014	Renaissance Campus		2014 Program Information	Approved (02/11/2014) 12/15/2013
Select	2014	Renaissance Campus		Q1 2014 Performance Report for RRSY	Pending - Not Started 04/30/2014
Select	2014	Renaissance Campus		Q2 2014 Performance Report for RRSY	Pending - Not Started 07/30/2014
Select	2014	Agency Personnel		Q2 2014 Personnel Information	Pending - Not Started 07/30/2014
Select	2014	Renaissance Campus		Q3 2014 Performance Report for RRSY	Pending - Not Started 10/30/2014
Select	2014	Renaissance Campus		Q4 2014 Performance Report for RRSY	Pending - Not Started 01/30/2015
Select	2014	Agency Personnel		Q4 2014 Personnel Information	Pending - Not Started 01/30/2015

### AGENCY REQUIRED DOCUMENTS

	Document Name	Status	Start Date	End Date	Uploaded By	Uploaded Date
Select	Contract Financial Performance Report	Pending				
Select	Corporate Compliance Certification	Active	01/01/2014	12/31/2014	AFRAS	Feb 10 2014 11:03AM
Select	Disaster Preparedness Contacts(D-COOP)	Active	01/01/2014	12/31/2014	AFRAS	Feb 10 2014 11:03AM
Select	Funding Authorization Summary	Active	02/02/2014	12/31/2014	jmonforts	Feb 2 2014 4:57PM
Select	OSAS Certifications	Active	01/01/2014	12/31/2014	AFRAS	Feb 10 2014 11:04AM

12

### AGENCY/SITE REQUIRED DOCUMENTS

### AGENCY APPENDIX INFORMATION

A11_Status	Contract Year	Agency Name
A.1.1 Approved (02/11/2014)	2014	ADDS FOUNDATION/ RENAISSANCE ADDICTION SERVICES, INC.

### AGENCY/SITES APPENDIX INFORMATION

A12_Status	A12a_Status	Contract Year	Site Name	Program Code	Disability Code	Site ID
A.1.2 Approved (02/11/2014)		2014	Renaissance Campus	3551	CD	00

### AGENCY INTERNAL NOTES

[Add A Note](#)

## **B. Addiction Recovery Employability System (ARES)**

# **ARES**

## **ADDICTION RECOVERY EMPLOYABILITY SYSTEM**

### **What is ARES?**

**ARES – (Alcohol Recovery Employability System)** is an Internet-based computer application that is designed to link the Monroe County Department of Health and Human Services and Community Substance Abuse Providers for the purpose of monitoring the treatment progress of individuals receiving Social Services benefits. It is accessed via an internet connection over a secure Virtual Private Network. ARES enables direct, secure internal Email, instant evaluation scheduling, smart tasks to be sent to users at key times, and is administered by each user organization independently. It makes reporting of monthly attendance information and 60 Day Progress Reports fast and efficient for Providers and sends the information directly to the desktop of the DHHS Examiner who is dealing with the case. It receives daily updates from the Welfare Management System and provides current information to those who need it without accessing two systems.

### **Who Participates?**

- The Department of Human and Health Services, Division of Social Services –
  - Temporary Assistance, Medicaid and Employment Services
- Fourteen (14) Community Substance Abuse Providers
- A contracted Behavioral Health Care Professional
- Coordinated Care Services, Inc.(CCSI) as the System Manager
- Innovative Solutions – System Designers

### **How was ARES developed?**

Discussions were held to survey the needs of Health and Human Services staff, the Provider Community, CCSI, and Innovative Solutions to determine the elements of a cost effective, real-time alternative to the previous manual process. The focus was on ease of use, flexibility, and utility for all the participants. Operational Specifications were determined and the design specifications of the application were developed and refined. A test system was developed and the full system was completed and tested. Training was provided to the User community. Data from the previous Chemical Dependency Tracking System was migrated to the new application and the system was implemented.

### **How does ARES work?**

Public Assistance and Medicaid applicants and recipients are screened at DSS to determine if they might need help in addressing a substance abuse problem. If the screening indicates a problem, the DSS Examiner enters the client demographic information into ARES and makes an on-line evaluation appointment with a participating community provider. The client receives a printed confirmation of the appointment noting directions to the provider and cancellation policies. Clients are expected to return to their previous Provider if they received treatment in the past.

Once the provider conducts their Chemical Dependency evaluation, they note the results in the ARES system and if the client needs to attend treatment they request approval for the level of care that they deem appropriate from the Contracted Behavioral Health Professional. On behalf of the County, the professional reviews all level of care plans and notifies the CD Provider of the DHHS position to support or not to support the treatment recommendation. Requests for Inpatient treatment require a

detailed clinical justification for that level of care since it is very costly. Treatment Providers must also request approval for a transfer of Providers. Once Clients have their treatment approved and begin attending a treatment program, the Community Provider enters their attendance in ARES each month and completes an on-line progress report every 60 days. CD Providers note the client's employability status on their progress reports. ARES participants are referred to the DSS employment unit once they are determined to be able to seek employment.

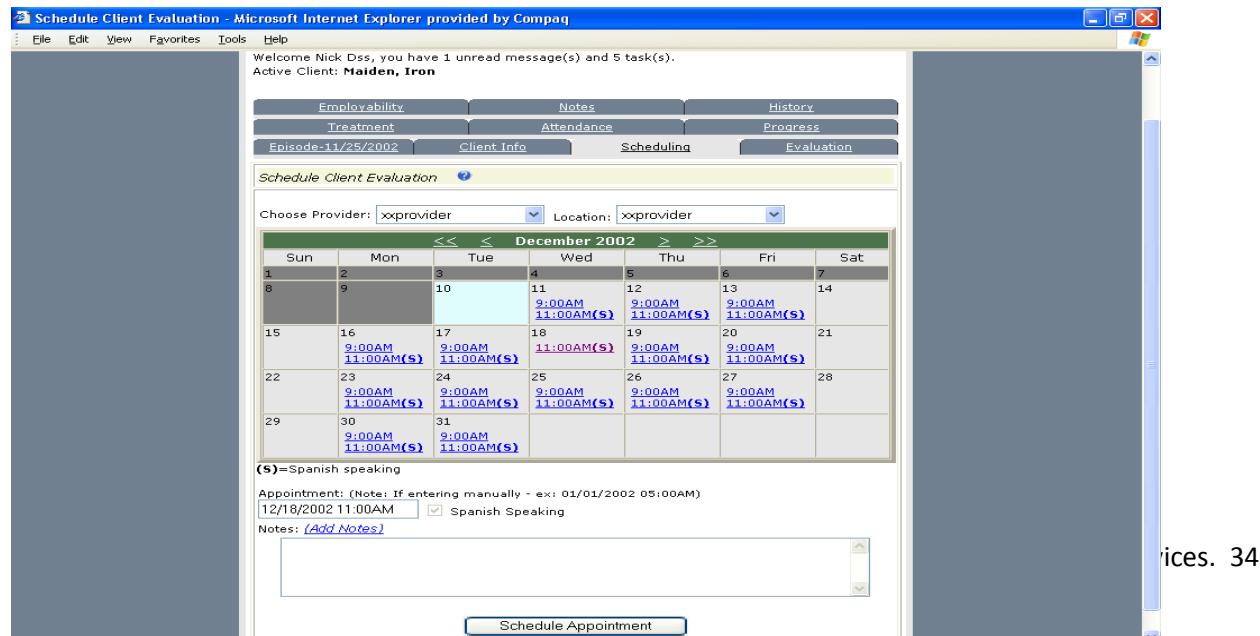
### **What are some of the useful features in ARES?**

- ARES is a "smart" system and has been programmed to recognize key points in case processing, identifying who needs to know this information and then sends the information automatically. For example, if a client is discharged from treatment, a notification is system generated to the appropriate Examiner alerting them so that the case can be reviewed and either closed or motivated back to treatment. Notifications are generated to DSS and Provider staff as well as the Behavioral Health Professional. ARES has on-line evaluation scheduling at any participating Provider and the system reviews the client record to help determine the most appropriate Provider based on case history.
- ARES has secure, internal e-mail which connects all users in the system
- ARES connects with the Welfare Management System daily and when a case closes at DSS and the effective date of closing is reached, it closes the ARES tracking episode and notifies all parties dealing with the case.
- ARES provides Users templates for the reporting of evaluation and treatment recommendations, attendance information, progress reports and discharge information.
- ARES supplies a full range of reports to Users. Reports have been designed to help keep track of daily operational processing, provider information on user performance and to gather information for additional analysis.

### **What does ARES look like?**

ARES is designed as a typical windows based, user-friendly, graphically based interface. The screens are arranged so that the user is intuitively led from one to another and has proven to be relatively easy to learn. Below are examples of some typical screens in ARES: ***NOTE-All patient information is dummy data.***

#### **Evaluation Scheduling Calendar**



## Client Main Page

The screenshot shows the 'Client Episode Information' page within the ARES - Client application. The browser title bar reads 'Client Episode Information - Microsoft Internet Explorer provided by Compaq'. The page header includes a 'File' menu and the text 'Welcome Nick Dss, you have 1 unread message(s) and 5 task(s). Active Client: Wilson, Brian'. A navigation bar at the top has tabs for 'Employability', 'Notes', 'History', 'Treatment', 'Attendance', 'Progress', 'Episode-10/17/2002', 'Client Info', 'Scheduling', and 'Evaluation'. The main content area is titled 'Client Episode Information' and shows a table with one row: 'View Episode' (link to View Episode), 'Episode Start Date' (10/17/2002), 'Episode End Date' (empty), and 'Episode Status' (Open). Below this is a table of client details: SSN (300000002), DOB (02/02/1982), DSS Case # (BA2222); Cin # (DH22222Q), DSS Unit (DSS), Nick Dss; Actual Start Date (12/01/2002), Projected End Date (01/31/2003), Actual End Date (empty); Responsible Agency (xxprovider), Responsible Counselor (empty), Progress Report Date (12/09/2002); Attendance Report (empty), Current Program (empty), Evaluation Appt Date (12/03/2002); Episode Close Date (Dec 2002), Episode Close Reason (empty). A notes section contains a text box with the text: '12/2/2002 12:04:22 PM From: Monitor, Annette Expecting Brian to need Tx'.

## Attendance Summary

The screenshot shows the 'Client Attendance' page within the ARES - Client application. The browser title bar reads 'Client Attendance - Microsoft Internet Explorer provided by Compaq'. The page header includes a 'File' menu and the text 'Welcome Nick Dss, you have 1 unread message(s) and 5 task(s). Active Client: Wilson, Brian'. A navigation bar at the top has tabs for 'Employability', 'Notes', 'History', 'Treatment', 'Attendance', 'Progress', 'Episode-10/17/2002', 'Client Info', 'Scheduling', and 'Evaluation'. The main content area is titled 'Client Attendance' and shows a table with one row: 'Date' (Dec-2002), 'Provider' (xxprovider), 'Program' (empty), 'Level of Care' (Outpatient), 'Scheduled' (12), 'Attended' (10), and 'Excused' (2). A notes section contains a text box with the text: 'Notes: (Add Notes)'.

### **What Types of Information is Available on ARES?**

ARES holds a complete treatment history (currently back two years) of each client, records of attendance at various programs and copies of a Progress Reports completed by any Provider they have received services from. It holds records of the clinical justification and background information for each Inpatient referral made. ARES has a daily direct link to the New York State Welfare Management System (WMS) which is the computer system that is used to identify eligible individuals and to authorize Public Assistance, Medicaid and Food Stamps benefits. Specific eligibility elements such as including address, case and individual eligibility status, the client's primary language and their veteran's status, are imported and ARES is updated with new information. Providers can verify their client's DSS status without consulting EMVES (electronic Medicaid Verification Eligibility System).

Additionally, the client's DSS employment activities are listed on the ARES system. This information is also imported from the WMS Employment Subsystem. The CD treatment schedule is entered by the Provider and efforts are made to reduce interference with treatment when employment activities and DSS appointments are scheduled. Information about Other Programs that the client is involved with can also be noted in ARES. These would include Methadone Maintenance, Residential Living, Case Management Activity, Criminal Justice involvement, and Mental Health Treatment. If the client's case is closed at DSS that information is available through ARES with an explanation of the cause of the closing and sanction if applicable.

### **What about Confidentiality?**

Innovative Solutions, which designed the ARES program, was very careful to ensure that all information in the system would conform to HIPAA (Health Information Portability and Accountability Act) Standards and designed in compliance with OASAS confidentiality requirements. In general the system only allows access to an individual client's information by their specific treatment provider, by Health and Human Services Examiners and by the Contract Service Agency. Viewing or changing a client's information is restricted by the ARES security system of organization registration and by use of individual roles, user sign-on, and passwords.

### **What Outcomes will be measured from ARES?**

The Monroe County Department of Health and Human Services and the Community Providers have all signed a Memorandum of Understanding (MOU) that outlines the expectations for the ARES project. The MOU is updated annually. Some of the expectations that are measured include:

- Guaranteed Five (5) day evaluation appointment availability
- Complete Evaluation within two (2) days of the appointment and include an opinion as to the potential employability of the client
- Start the client in the approved treatment program within 10 days of the evaluation scheduling date
- Enter Attendance for all participants by the 10<sup>th</sup> of the month
- Complete Progress Reports every 60 days

A Monthly Process Report is produced to summarize Provider compliance with these expectations. DSS has agreed to provide referrals to the participating providers and to guarantee payment for any DSS arranged evaluation. ARES provides a full range of operational reports to assist in daily activities and in the analysis of data to determine effectiveness and timeliness of treatment and reporting. Cost containment is also a valuable product of ARES. Clients not participating in mandated treatment are quickly identified so appropriate action can be taken. Review of proposed treatment plans by the Behavioral Health Professional allows some control over Inpatient or Out-of-County

treatment. Information about client's who have multiple treatment histories and make little progress can be identified and referred for case management interventions.

**What else should we know about ARES and Outcomes?**

The ARES Partners – DSS, Community Providers, Service Agencies, and CCSI meet monthly to discuss the program and to discuss improvements in the system along with other treatment or process issues related to the effective community approach to Chemical Dependency Treatment. This community approach to the CD treatment process has been very helpful to Providers and Health and Human Services in providing a real time, technology based solution to assist in the management of chemical dependency services and its volatile population.

ARES has been shown to be an effective tool in monitoring client compliance with prescribed treatment. Clients enter treatment sooner and the no show rate for evaluations has been improved making management of resources by Providers easier. Ease of reporting and accountability has improved Provider compliance with reporting of attendance and Progress in treatment. Providers report that clients who do engage in treatment stay in treatment longer improving their chances for a productive and stable recovery. Inpatient costs have been significantly reduced and although Outpatient costs have increased minimally, the net savings is significant. The partnership established with local providers has minimized the County dollars leaving the community for treatment providers elsewhere. Communications have been facilitated between the Human and Health Services staff making for more coordinated efforts resulting in better, and more timely treatments for chemically dependent individuals and most importantly improving the chances for a stable recovery, return to the workforce and self-sufficiency.

### **C. Outcomes-Based Prescribing (OBP)**

The following is a draft of this paper, currently in the publication process. Please do not distribute beyond the use of this RFP review or use any part at this time beyond the current scope.

## **Outcomes-Based Prescribing: A Novel Use of Electronic Health Record Data To Inform Patient and Clinician Treatment Choices**

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The authors would like to extend their great appreciation to others who played supportive roles in this venture: Diane Niemann, VISN 2 CIO, James McCain VA Central Office - Innovations Program, W. Ashley Byrd of ICF International which built the software, Joseph Linza of CWI Contractors, Jeff Wolfganger of Canandaigua VA, Jane Wood and Krista Stephenson of the VISN Center of Excellence for Suicide Prevention. *Journal: British Journal of Medical Informatics*

### **Abstract**

General information about how medications work and their side effects can be readily accessed by clinicians and patients through abundant online resources. While access to these resources is important for patients, the applicability of general medical information to the individual's own experience remains limited. This gap impedes the process of better engaging patients in decisions for their own healthcare. Personal healthcare support and tools exist and there is no shortage of individual healthcare data. However, tools are lacking to bring personalized healthcare to life. Using a concept of Individualized Comparative Effectiveness Research, we developed a working prototype of a practical tool which draws upon enterprise electronic health record data to help patients and clinicians better predict individual outcomes when making decisions for new or additional treatments.

### **Introduction**

Treatment methods for physical and mental illnesses vary widely across the US (Wennberg, 2004; Baiker et al., 2004; McGlynn et al., 2003). Patient outcomes also vary and are dependent not only on area treatment and practice methods but other important factors such as geography (e.g., climate, region, culture) and demography (age, race, ethnicity, gender, language, culture). In general, we know that treatments and medications currently on the market work to some extent based on the results of clinical trials and population-based public health studies. One of the recognized weaknesses of these studies is that while findings are applicable to the general population, they cannot necessarily be applied to any individual case. Typically, individuals receiving new medications are put through their own rounds of medication trials until one or a mix is found to have sufficient clinical impact (Alemi et al., 2009). At such a point, subsequent trials cease until a new medication is needed, and the cycle is repeated. This trial-and-error process is both inefficient and expensive for the healthcare system and the patient. Within the past decade patients and healthcare systems have begun to develop ways for individuals to share their own personal experiences with treatments and medications. Efforts include self-report tools (e.g., the Medicare Health Outcomes Survey) and Internet-based self-report forums (e.g., [www.PatientsLikeMe.com](http://www.PatientsLikeMe.com)) as well as personal health records (PHRs) offered by healthcare systems and online public access (e.g., Microsoft HealthVault).

The game-changer for this problem is increasingly robust electronic health record (EHR) systems and EHR data. EHRs are slowly being adopted by private physician groups and practices (Hsiao et al., 2009; Jha et al., 2009; Blumenthal and Tavenner, 2010) and their aggregate data can begin to serve individual patients in addition to the overall corporate structure. Innovative tools can boost the movement toward the development of “true” personalized medicine. This paper describes a tool prototype built using model data from the VA’s VistA EHR system. This tool can provide the ability for individual patients to seek clinical outcomes information from treatment/medication experience of other patients with similar characteristics at the local level.

## Background

The concept of “personalized medicine” is central to healthcare reform policies. Briefly, the mission of personalized medicine is to deliver the right care for that individual, to that individual, a matter of more precisely tailoring treatments at the individual level based on data. One increasingly ubiquitous platform through which this may be accomplished is health information technologies. Technologies to deliver health information are abundant: conventional popular media (radio, newspaper, television), academic literature, online informational websites, FDA websites, manufacturer recommendations, internal health system prescribing guidelines, insurance company regulations, and summary knowledge provided by EHR systems regarding medication safety and efficacy are some of the more popular avenues. The Internet and its components are the most important platforms for promoting greater involvement of patients in maintaining their own health. For example, patients can now share feedback and commentary from their own personal illness and treatment experiences with other patients through web sites such as [www.PatientsLikeMe.com](http://www.PatientsLikeMe.com), [www.AskaPatient.com](http://www.AskaPatient.com), and [www.crazymed.us](http://www.crazymed.us). Other sites such as [www.webmd.com](http://www.webmd.com) and [www.revolutionhealth.com](http://www.revolutionhealth.com) provide more formal, science-based information about illness and treatments.

The content in both patient commentary and formalized informational websites can help patients make choices about their treatment and better anticipate treatment outcomes (Hughes and Cohen, 2011), but only to a point. HIPAA laws allow only certain de-identified fields, generally age, gender, diagnosis, treatment, and symptoms, for use to “drill down” into the data. For example, a patient in rural Louisiana cannot know that the feedback she is receiving from diabetes medication reviews is from individuals in her own part of the country, and from patients living in rural areas as she does. Patients and providers cannot drill down deep enough into the data to determine how patients fare within or between geographic areas (like Des Moines, Iowa vs. New Orleans, Louisiana), or even within the same healthcare system. This limits more robust uses of these kinds of data.

Patient personal health records (PHR) have received increasing attention as useful communication and health maintenance platforms which can be shaped to help these problems. Beyond being simply portals, PHRs allow patients to interact with parts of their own healthcare record and their healthcare provider (Page, 2010). They can also host information-based healthcare and wellness tools. While intrinsically useful, PHRs have had a slow uptake among patients and providers (Rhodes, 2007; Markle Foundation, 2011). Adding useful features and tools may not only help bring more patients to enroll in PHRs but provide increasing benefit to their doing so (North et al., 2011).

Such tools can be designed to help answer two of the most fundamental questions patients can ask: 1) For my condition, which treatments work better than others? and 2) Which treatments are most likely to work best for me? Comparative Effectiveness Research (CER) can help answer the first question and provide a model for addressing the second. The Congressional Budget Office has defined CER as “...a rigorous evaluation of the impact of different options that are available for treating a given medical condition for a particular set of patients” (CBO, 2009). The Institute of Medicine (2009) goes further: CER is *“the generation and synthesis of evidence that compares the benefits and harms of alternative methods to prevent, diagnose, treat, and monitor a clinical condition or to improve the delivery of care.”*

*The purpose of CER is to assist consumers, clinicians, purchasers, and policy makers to make informed decisions that will improve health care at both the individual and population levels.*" CER is a feature of the American Recovery and Reinvestment Act of 2009 (Iglehart, 2009) and the Patient Protection and Affordable Care Act of 2010. It is highly integrated into the US Department of Veterans Affairs (VA) and other health-related federal agencies (O'Leary et al., 2010). Although Mushlin and Ghomrawi (2010) assert the strategic importance of CER as an evidence-based form of cost containment, it has not fully evolved to provide efficient methodologies which can be used on the frontlines of care to control costs (Schneeweiss, 2007) and is still in relative infancy for use directly with frontline providers and patients.

A growing body of personalized medicine research has developed the concepts of individualized comparative effectiveness (Epstein and Teagarden, 2010; Thomas et al., 2010; Hoffman and Podgurski, 2011) and outcomes-based treatment decisions (Crilly, 2012; Esmaily et al., 2010). Studies have drawn upon enterprise clinical data warehouses and population databases (Alemi et al., 2011) to evaluate the composite treatment experiences for specific medications and to develop statistical methods to identify and evaluate these data (Alemi et al., 2009). Tapping directly into the EHR itself is the next logical step. EHR systems form the important information core that contains individual patient-level treatment and outcome data. Large EHR systems such as the US Department of Veterans Affairs' (VA) VistA (Veterans Health Information and Technology Architecture, Brown et al., 2003) and Epic ([www.epic.com](http://www.epic.com)) have made substantial headway in maximizing actionable data elements and eliminating non-searchable text fields. Several studies drawing upon EHR data in this manner have shown positive results. For example, a study by Pakhomov et al. (2008) used a "bag-of-concepts" method to extract quality of life data from the text of physicians' EHR notes. They concluded that physicians' notes can be used to calculate a surrogate quality of life rating for pain. Tannen et al. (2009) also found that methods to decrease the effects of confounding variables allows EHR data to more accurately measure therapeutic effectiveness.

The increasing availability of data granularity allows the building of targeted, patient-specific applications (Ho et al., 2012) to positively impact not only on delivery of care, but patient's choice of treatments. With the Patient Protection and Affordable Care Act already having an effect on the construction, content, and rapid proliferation of electronic health record systems (Elnahal et al., 2011), there are abundant opportunities to increase the value of PHR and EHR systems both to healthcare providers and consumers.

## Methods

### Project Description:

Using such approaches as guidelines, we built an "Outcomes-Based Prescribing" (VA-OBP) system to inform the normal prescribing process of clinicians and patients by making use of aggregate EHR data. Typically, patient outcomes are evaluated prospectively after the start of a medication and doses are changed accordingly. We were interested in developing methods to determine approximate or expected outcomes on a given treatment for a given patient based on how other patients similar to them have done on those same medications and doses. We sought to get as close to approximating potential outcomes for an individual patient as possible by building a comparison cohort of patients sufficiently similar to that individual. The output would provide the clinician and patient a compilation of outcomes and a summary of the range of experience that similar patients have had with a particular medication. This paper describes the conceptual model of the system, the system architecture, and presents screen impressions. We then report our conclusions and outline next steps. The purpose of this project was to develop proof-of-concept and software operationalization of the Outcomes-Based Prescribing conceptual model. The project was funded by the Greenfield Innovations Program of the US Department of Veterans Affairs.

### *Conceptual Model: Venue of Use:*

Patient-provider interactions are complex, but when providing new or different treatment, can be outlined across 4 steps:

1. Patient receives a new diagnosis or needs to start on a new medication
2. Patient reviews information on disease, identifies and becomes familiar with potential treatments
3. Patient discusses treatment options with provider
4. Patient and provider jointly reach treatment decision

Adding OBP will provide two additional steps, occurring between steps 3 and 4 above:

1. Patient and provider view data on how other patients like themselves have fared on the different treatment options under consideration
2. Patient and provider view additional data on cost, generic availability, FDA warnings, and FDA adverse events

### *Conceptual Model: Software Development/Design Tasks:*

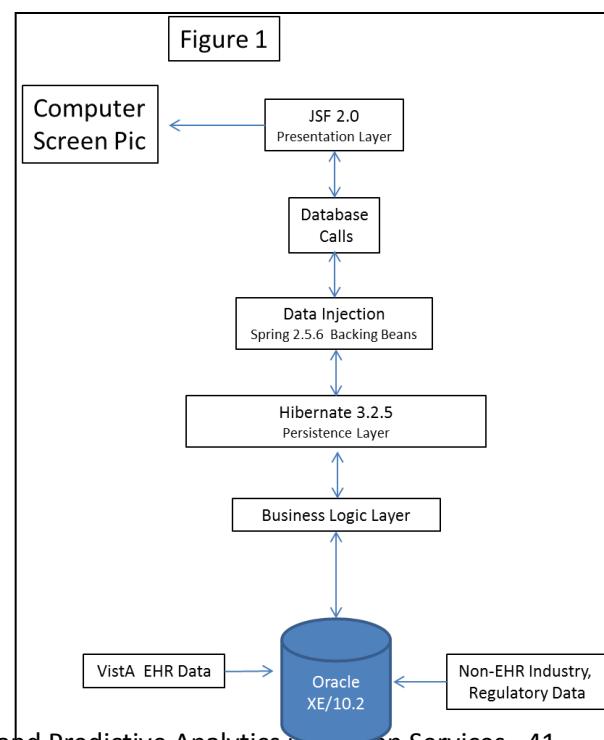
We identified four key development categories:

1. To develop processes for data retrieval and definition to allow identification of the index patient and then the de-identified comparison group.
2. Draw descriptive information about the medication from outside sources, such as when the medication received FDA approval, how long it has been on the market, the length of time remaining on the patent, and whether generic versions exist for off-patent dosage units.
3. To draw outcomes data for the comparison cohort from the EHR. These data are used to characterize the outcomes of the target medication for the reference patient based on the real-time outcomes and experiences of similar patients. Data will include physical, mental, and social functioning fields.
4. To calculate, analyze, and report outcomes back to the provider in a useful format. Calculation and analysis will include integrating the data to produce easy-to-understand results which are relevant to the needs of the prescriber and patient.

### *System Architecture:*

The VA-OBP system was designed by the lead author (JFC) and built by ICF (WAB) under a VA contract with CWI. Data and medical parameters were determined by authors JFC and LCTL. VA-OBP is a multi-layered Java J2EE application built to run on a web application server. Data are presented to the user via a web front-end. All system data are stored on an Oracle XE database. The application can be run on any J2EE application server and contains the following components:

**Presentation Layer - JSF 2.0:** The presentation layer uses JSF 2.0 to display data to the user via a web browser. JSF enables AJAX functionality resulting in partial form submits which produces immediate webpage updates without refresh. JSF components also provide rich interfaces like tabbed panels.



Persistence Layer - Hibernate 3.2.5: The persistence layer is an abstract layer that separates direct database calls from business logic. Java objects are mapped to database tables via Hibernate configuration files. Once mapped, these persistent objects allow access to database data through their various method calls.

Data Injection - Spring 2.5.6: The presentation layer accesses its display data through calls to backing beans. Backing beans use data access objects (DAO) to manipulate Hibernate persistence objects. The DAOs are initialized with Spring.

Business Logic Layer: Data pull rules and parameter dictionary, created separately and updated based on new research findings, best practices, and revised clinical guidelines.

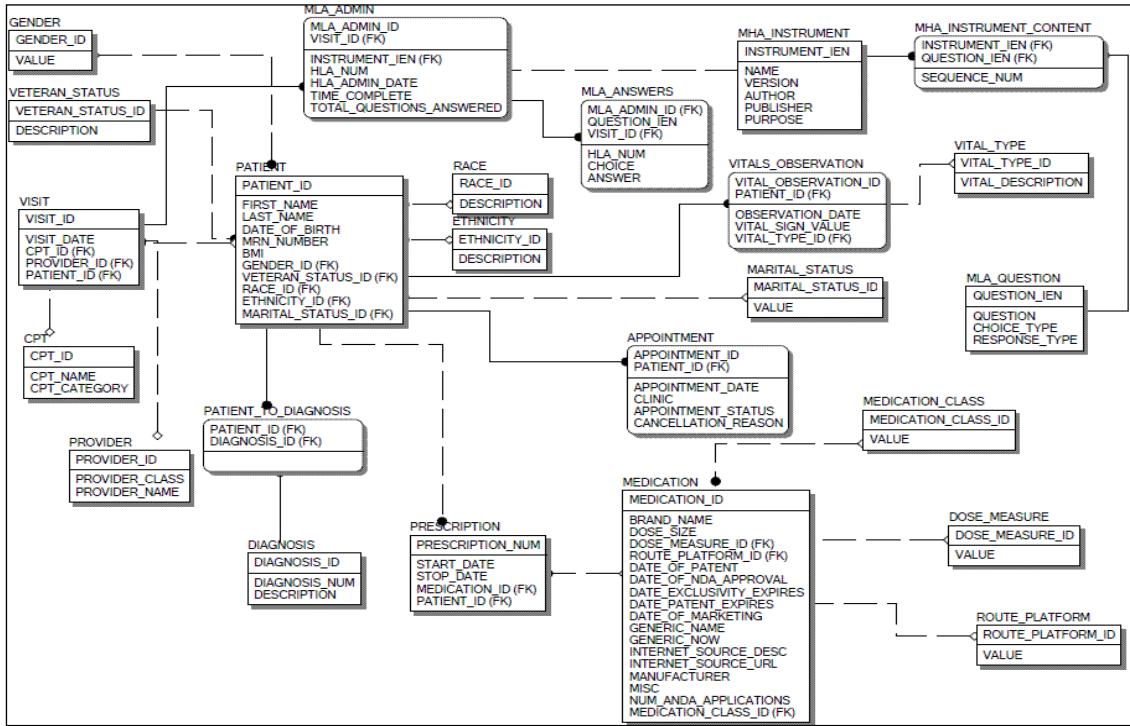
Build - Maven 2.2: VA-OBP source code was built using Maven. A system war file was created by running the install goal of the Maven pom.xml file. Because Maven will download all necessary jar files, these dependency files do not need to be locally available when building. Maven gathers these files and places them in the repository if they are not already there.

## **Data Model**

We sought to formulate a dynamic dataset of EHR and other auxiliary data that can be frequently updated. Although we initially sought to use “live” VistA data, running VA-OBP would cause a substantial drag on live system operation. Instead, we designed structured query call data from the local VistA system, creating a relatively small dataset for OBP use. Theoretically, VA-OBP dataset updates can be run overnight or on weekends and, depending on the number of medical specialty areas OBP draws from, may produce a substantial stand-alone set. This can be designed and managed different ways depending on the individual application. For this project, we used only VistA CPT code data fields that were codified and commonly available. To choose the fields to use, a small expert committee examined specific data fields and identified potential choices based on data field relevance, availability, completeness, and clarity of data definition. We then analyzed these data fields in large patient extracts using SAS (ver. 9.2) to determine fields with sufficient data to support OBP.

Although we examined actual patient data for determining fields to include in the model, we used only simulated data in building the prototype. Data field categories included patient demographic, diagnosis, service utilization (CPT, Visit, Appointment), treatment (medication-related), assessment/diagnostic (Vitals), and mental health (from the VA Mental Health Assessment battery). We also tested the ability to integrate useful information from other sources. We created an Excel dataset of medication information including patent and manufacturer information manually extracted data from the FDA Orange Book ([www.accessdata.fda.gov/scripts/cder/ob/default.cfm](http://www.accessdata.fda.gov/scripts/cder/ob/default.cfm)). This information is not included in pharmacy or EHR databases but can be useful in the prescribing process. The data map is presented in Figure 2.

**Figure 2**  
**VA-OBP Data Map**



**Data Parameters:**

We performed literature searches, identified evidence-based practices, and sought expert opinion to build data search parameters for the following areas: medications, reference group elements (patient descriptive information), outcomes elements (social, services utilization, clinical/symptoms, satisfaction, physical, and mental). For medication, we offered only two class choices: Antidepressants and Antipsychotics. All medication names for each class in the VA formulary were entered.

**Reference Group Build Elements**

**Table 1**  
**Category and Description of Data Parameters**

Category	Description
Patient Descriptive Information	
Gender	No parameters necessary beyond M/F designation of the index patient
Age	+/- 2 years of the age of the index patient (regardless of decade born)
BMI	+/- 2% of BMI
Race/Ethnicity	Categorized into White, Black, Hispanic, Native American, Asian, Other
Mental Health Diagnosis	Diagnoses occurring separately or co-occurring: specified, not inferred. <ul style="list-style-type: none"> <li>• Psychotic Disorder or Diagnoses “with Psychotic Features”</li> <li>• Depressive Disorders</li> </ul>
Outcomes Elements: [Baseline=at start of index meds; End=stop of meds OR to today's date)	
Social	Employment Status and Homeless Status: <ul style="list-style-type: none"> <li>• Change from baseline: Employment or Homeless NO to YES after start of meds (i.e., while taking identified medication) OR</li> <li>• Change from Baseline: Employment or Homeless YES to NO after meds</li> </ul>
Services Utilization	Change in pattern of services use (more, less, different pattern, etc.):

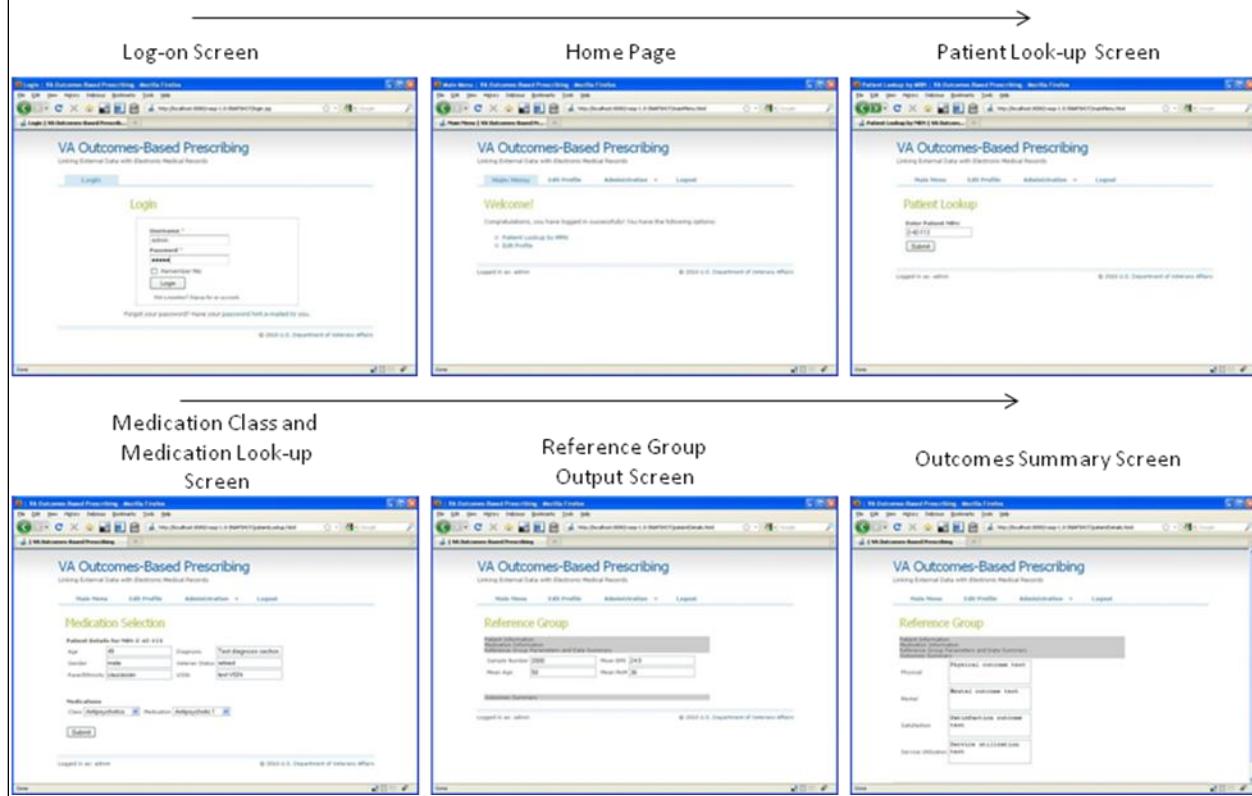
	<ul style="list-style-type: none"> <li>Frequency and type of visit (e.g., primary care, mental health)</li> <li>ED vs. Outpatient vs. Maintenance therapy vs. Inpatient</li> <li>Type of provider of service: MD, MH therapist, Primary Care or mental health worker, Nurse, OT, voc. rehab., substance abuse counselor, etc.</li> </ul>
Clinical/Symptoms	<ul style="list-style-type: none"> <li>Suicide ideation (increase, decrease, occurrence, re-occurrence)</li> <li>Suicide attempts (incidence)</li> <li>Change in symptoms of depression, anxiety, psychosis</li> </ul>
Satisfaction	<ul style="list-style-type: none"> <li>Drug refilled as scheduled</li> <li>% scheduled appointments kept (all health appointments: primary care, medical, maintenance, mental health, etc.). Rate +/- 5% is notable.</li> </ul>
Physical	<ul style="list-style-type: none"> <li>Critical labs: +/-5% change in WBC and neutrophils</li> <li>Weight changes: +/-5% of body mass <ul style="list-style-type: none"> <li>Meets clinical criteria for obesity (Height/Weight)</li> </ul> </li> <li>Blood Pressure: +/-3% change in blood pressure (regardless of WNL)</li> </ul>
Mental	<ul style="list-style-type: none"> <li>Suicide-related behavior: Emergence OR decrease OR none <ul style="list-style-type: none"> <li>Self-injury</li> <li>Suicide attempts</li> <li>Calls to Hotline</li> </ul> </li> <li>PTSD symptoms (Increase/Decrease)</li> <li>Depression symptoms (Increase/Decrease) <ul style="list-style-type: none"> <li>By 1 or more measurement points from Baseline</li> <li>No return to Baseline if symptom increase after 6 weeks</li> </ul> </li> </ul>

## Results

Although not evaluated by users outside of the development team, our goal was to make an operational system that is as simple as possible. We sought to include in the design only a minimum number of screens with an uncluttered presentation that could be viewed individually or together by the prescribing clinician or the patient during the same office visit. Figure 3 presents the six screens which are the front-end of the VA-OBP system.

The first screen requests a Log-On procedure to verify the user. This is necessary for a stand-alone module but can be modified to use in EHR systems with a single sign-on. Moving from left to right, next is the Home Page which contains introductory and explanatory statements about OBP. For this prototype the system asks for a medical record number (MRN) but can be any case identifier. The response to this screen brings the Patient Look-up Screen which identifies the “index patient” and calls their data into the matching algorithm. These include demographic, diagnostic, and clinical data to define the parameters of the comparison group. The fourth screen (bottom left) requests the user to choose the medication of interest. For this prototype, we built in only anti-depressant and antipsychotic medication choices. The fifth screen, the Reference Group Output Screen, allows the prescriber and patient to see the information on the construction of the Reference Group. Finally, the Outcomes Summary Screen presents the Outcomes sought by the users. For this prototype, outcomes data are presented in a text format. Background algorithms for this prototype were based on fairly contained approaches, primarily fitting patients and their outcomes within or outside of parameters set by the investigators.

Figure 3: VAOBP Screens



## Discussion

This OBP tool is designed to provide patients and providers CER-type information using up-to-date patient outcome information from EHR system data, ideally delivered through the PHR. Since not all EHRs are equally robust, it is important that tools such as OBP are developed to use, at minimum, common data elements from any EHR system. In the broader context, OBP is designed to be a formal patient decision-making tool for personalized medicine. To our knowledge, it is one of only a few attempts to design a working individualized CER tool for patients which goes beyond supplying disease or wellness information or general patient self-reports to the individual patient situation. Other such attempts are the subject of patent applications by Alemi (see patents 7,702,526 – 2010 and 8,145,583 – 2012). These patents describe processes which seek to primarily predict the outcome of a specific medication (citalopram) in specific individuals using genomic and other biological data. OBP is different in that it seeks to use more universally available data from EHR systems to help patients and providers make choices. OBP can also allow a means by which providers can increase the individuality of their treatment by working with patients to help better identify potential initial or next-step treatments. Although designed around psychiatric disorders, OBP could theoretically apply to other specialized diagnosis categories such as diabetes, spinal cord pain treatment, and interventions around suicide prevention activities, areas highly relevant to Veteran populations.

It is important to note that OBP and individualized comparative effectiveness are predicated on the assumption that experience in a group can be predictive of individual outcomes. This is not a new concept and can be a core building block of personalized medicine. The rationale is that medical discovery has been built on the outcomes of clinical trials using the relatively small purpose-built cohorts to show effectiveness of treatments. Outcomes are then applied to large groups of individuals under the assumption that the value can be translated. Actual usefulness to patients and providers at the

individual level is lost. However, the broad use of patient self-reported outcome sites such as [www.patientslikeme.org](http://www.patientslikeme.org) suggests that there is a desire for more individually-based information among patients, an acceptance of this style of reporting, and value placed in this kind of feedback. This type of information along with Comparative Effectiveness Research have the potential to be major parts of healthcare reform over the next decade, propelled by the increased quality, quantity, granularity, and accessibility of EHR data. The focus of the optimization of these data must be usefulness and applicability. Although CER currently supports policy changes on a large scale, it is also an excellent model for tools scalable for the frontline of care. There is always concern about “clutter,” when clinicians are provided with so many decision-support tools that there is risk that none, or only a few, will be used. We were sensitive to the potential feelings of clinicians that tools are designed to more or less automate (and thus diminish) their decision-making role in care. The novelty of our approach is its focus on the patient and on patient-clinician interaction as our target and integrating it into the EHR and PHR. This is different from conventional decision-support designs which integrate both CER and non-CER information and data primarily for clinician use.

### **Design Challenges**

VA-OBP is not the same as predicting whether a specific medication will work in a specific individual, or for tailoring medications to patient's characteristics as found in Alemi's work and patent applications. That work relies on having access to highly detailed genomic and physiologic data. These data are not widely available, and are not accessible for most patients in most EHRs, so cannot feasibly be a part of a practical system at this point (Denney, 2011). Still, there remain a number of design challenges which must be addressed to move this into a more practical application. The three primary challenges are 1) the development of accurate outcome parameters for comparison groups (e.g., which changes in condition can be considered positive, negative, or null?), 2) data access (gaining access to EHR data sources), and 3) analysis of data (application of appropriate statistical methods). It will be important to develop plans to address these issues before VA-OBP can be used as an applied approach.

### **Future Development**

VA-OBP has the potential to operate within a number of functions, such as a stand-alone module, as an element integrated into an EHR, and as an element of patient portals or PHRs. Its design is novel because it goes beyond the use of the individual's own data and makes use of the power of numbers which exist in healthcare systems' EHRs. As a function of the PHR, it can add value, thereby increasing its use.

We intend to pursue 4 primary directions for future development. The first direction would be to expand VA-OBP to test its robustness with different sizes of datasets to simulate different sizes of healthcare systems. The second direction is to develop a mobile application (or app) which would allow greater flexibility and availability to patients and clinicians. Third, we will continue to develop the power of our algorithms. These could include a form of decision support to help in the prescription process to optimize chances of choosing the right medication first (“prescription optimization”). Fourth, we are interested in expanding the patient functionality to add to it the current functionality of patient commentary and feedback sites but with the ability to drill down so that patients can really get a better sense of the treatment experiences of patients truly like themselves. This will result in expanding the availability of CER concepts to many more settings and thus positively impact treatment, outcomes, and patient satisfaction with treatment.

### **Conclusion:**

This is an area of opportunity for growth and development which can positively impact patients, providers, and healthcare systems. Specifically, clinicians who prescribe treatments, particularly

medications, lack access to important clinical outcomes data that could help optimize treatment responses in their patients. Furthermore, determining which treatment will provide the most benefit with the least problems for a particular patient within a particular community remains a significant challenge for any prescriber.

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Schneeweiss S (2007). Developments in post-marketing comparative effectiveness research, *Clinical Pharmacology and Therapeutics*, 82(2): 143-56.

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## **APPENDIX B** **Curricula Vitae**

Included are CVs for all staff identified at this point: Drs. Crilly, Cleek, and Mercado and Ashley Fuss.

### **CURRICULUM VITAE** April, 2014 **John F. Crilly, PhD, MPH, MSW**

#### **I. Contact Data**

Telephone (cell): [REDACTED]  
e-mail: jcrilly@ccsi.org  
jcrilly@tulane.edu

#### **II. Present Positions**

Director, Quality Improvement, Coordinated Care Services, Inc. (CCSI),  
Rochester, NY  
Adjunct Assistant Professor, Tulane University, Department of  
Psychiatry and Behavioral Sciences, New Orleans, LA  
Director of Special Programs, Community Empowerment Services  
Agency, New Orleans, LA

#### **III. Education**

1978-1982 Social Work, The Catholic University of America, Washington, DC (BA)  
1984-1986 Social Work, Fordham University, New York, NY (MSW)  
1997-2005 Public Health, University of Rochester, Rochester, NY (MPH)  
1997-2005 Health Services Research and Policy, University of Rochester (Ph.D.)

#### **IV. Degrees**

1982 Bachelor of Arts and Science  
1986 MSW, Master of Social Work (NYS Lic.#: 034378-1; Cert.# 6461748)  
2005 MPH, Master of Public Health  
2005 Ph.D., Doctorate of Sciences in Health Services Research and Policy

#### **V. Professional Experiences**

11/2012 – Present Director, Quality Improvement  
Coordinated Care Services, Inc (CCSI)  
Rochester, NY  
Duties: Create QI department, oversee data management, data analysis,  
reporting, develop customer base, develop and implement Continuous  
Quality Improvement methods in work with counties, state, and private  
entities.

3/2013 – 10/2013 Director of Operations  
New York State Office of Mental Health  
Rochester Psychiatric Center

	Rochester, NY Duties: Oversee clinical and strategic operations of all adult inpatient and forensic services.
1/2011 – Present	(Adjunct) Assistant Professor Tulane University Medical Center, Dept. of Psychiatry New Orleans, LA Duties: Research, data management/analyses, subject expertise electronic health records, electronic communication technology, mental health, health informatics
1/2011 – 06/2013	Health Sciences Researcher Affiliated Health Sciences Researcher VISN 2 Center of Excellence for Suicide Prevention Canandaigua VAMC, Canandaigua, NY Duties: Research, manuscripts, grant writing, subject expertise: electronic health records, electronic communication technology, mental health, health informatics
1/2011 – 8/2012	Health Sciences Researcher VISN 16 MIRECC Southeast Louisiana Veterans Health Care System (SLVHCS) New Orleans, LA
2/2010 – Present	Director, Special Programs Community Empowerment Service Agency (CESA) New Orleans, LA Duties: Subject expert, program/business development, supervision
8/2009-2/2010	Principal Epic Rx Trainer, Department of Pharmacy Epic Electronic Health Record Implementation Team Information Systems Division University of Rochester Medical Center Rochester, NY Duties: Subject expert, training, EHR programming
7/2008-7/2009	Certification Commission for Healthcare Information Technology (CCHIT): Member, Behavioral Health Work Group Duties: Expert advisement
7/2007-12/2010	Health Sciences Researcher and Data Systems Manager Center of Excellence at Canandaigua Veterans Health Affairs, Canandaigua VAMC Canandaigua, NY Duties: Research, website design, clinical applications

2/2005-12/2009	Director, Clinical Outcomes Department of Psychiatry Core Advisory Team, Electronic Health Record Information Systems Division University of Rochester Medical Center Rochester, NY Duties: Research, data management/analyses, EHR consultation
6/1991-2/2005	Treatment Team Leader New York State Office of Mental Health Rochester Psychiatric Center Rochester, NY Duties: Management, supervision, treatment development
1990-1991	Sr. Programmer/Analyst University of Rochester Medical Center Department of Psychiatry And Rochester Psychiatric Center Rochester, NY Duties: Clinical research, data management/analyses, programming
1989-1990	Social Worker New York State Office of Mental Health Willard Psychiatric Center Willard, NY Duties: Clinical work with patients, quality assurance, data analyses
1986-1989	Clinical Research Analyst New York State Psychiatric Institute Columbia University New York, NY Duties: Data management (SAS/SPSS/BMDP), analyses, training
1982-1986	Mutual Funds Administrator Donaldson, Lufkin & Jenrette Alliance Capital Management 30 Broad Street New York, NY Duties: Fund management, purchase/sale short-term securities

Academic Appointments:

1/2011-Present	Assistant Professor, Tulane University, Department of Psychiatry and Neurology, New Orleans, LA (Adjunct since 8/2013)
3/2010-12/2010	Clinical Assistant Professor, University of Rochester, Department of Psychiatry, Rochester, NY
2/2008-2/2010	Assistant Professor, University of Rochester, Department of Psychiatry, Rochester, NY

2/2005-2/2008 Senior Instructor, University of Rochester, Department of Psychiatry, Rochester, NY

### Teaching and Other Faculty Appointments:

2/2011-11/2011	William Carey University, New Orleans, LA, Adjunct Professor (Courses taught: Consumer Health, Social Problems, Introduction to Social Work)
2/2007-3/2014	University of Rochester, School of Nursing and Warner School of Education, Rochester, NY, Ph.D. Advisor
9/2006-12/2009	University of Rochester, Department of Community and Preventive Medicine, Rochester, NY, Adjunct Instructor (Course taught: Introduction to Health Services Research, Doctoral Program)
5/2006-5/2008	Greater Rochester Collaborative MSW Program, Nazareth College and SUNY Brockport Schools of Social Work, New York, Adjunct Instructor (Courses taught: Social Work Practice, Research Methods)
1/1995-12/2007	State University of New York at Buffalo, Department of Social Work, Buffalo, New York, Clinical Assistant Professor (Courses taught: Social Work Practice, Research Methods, Organizational Theory, Personality Disorders)

### Dissertation Committees:

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10/2009-3/2014 University of Rochester Warner School of Education  
Candidate: Khamkay Chitaphong

Reviewer for:

Psychiatric Services  
Mental Illness (at [www.pagepress.org/mi](http://www.pagepress.org/mi))  
Value in Health  
Health Services Research (HSR)  
eHealth and Mental Health QUERIs, US Department of Veterans Affairs (Grant Reviewer)

### Board Membership:

12/2013 – Present	Compeer, Inc., Rochester, NY
6/2005 – 10/2012	Coordinated Care Services, Inc. (CCSI), Rochester, NY

## VI. Professional Affiliations

## Workgroups

4/2011 – 8/2013	MyHealtheVet Personal Health Record Performance Workgroup. US Dept. of Veterans Affairs, VA Central Office
2/2012 – 12/2012	MyHealtheVet Policy Revision Workgroup. US Dept. of Veterans Affairs, VA Central Office.
1/2013 – 8/2013	National Executive Committee, VITAL Initiative, US Dept. of Veterans Affairs, VA Central Office
2/2013 – 8/2013	VA Workgroup for Enterprise Text Messaging, US Dept. of Veterans Affairs, VA Central Office

## **Grants**

### *Community Agency Grants*

Louisiana Workforce Commission, Terrebonne Parish: OJT Contract with Pearl Inc. Workforce Re-Training, Gulf Coast Fishing/Seafood Industry: Total Grant: \$264,000  
Community Empowerment Agency (CESA)  
02/28/2011-06/30/2012

Louisiana Workforce Commission, Jefferson Parish: Specialized Training Contract  
Certified Translation Services, LLP: Total Grant: \$102,620  
Community Empowerment Agency (CESA)  
04/15/2011-06/30/2012

Private Investment/Venture Capital  
Special Business Entity: FIn International, LLP  
Total Investments secured to date: \$210,000  
Community Empowerment Agency (CESA)  
10/1/2011-Present

### *Academic Grants*

US Department of Veterans Health Affairs, Center of Excellence for Suicide Prevention: Total Grant: \$100,000.

“Keeping In Touch”  
03/31/2011 – Present  
PI: Sonya Batten, PhD; Robert Bossarte, PhD  
Site Investigator: John Crilly, PhD  
Status: COMPLETE

US Department of Veterans Affairs, VISN 16 MIRECC: Total Grant: \$20,000  
“Clinical Demonstration Project for Increasing Treatment Engagement with OEF/OIF/OND Veterans.  
10/2011-9/2012  
PI: John Crilly, PhD, MPH, MSW  
Co-PI: Frederic Sautter, PhD

US Department of Veterans Health Affairs, Center of Excellence for Suicide Prevention: Total Grant: \$100,000 (Coverage: 2/8 FTE).  
“Keeping In Touch”  
03/31/2011 – Present  
PI: Ira Katz, MD, PhD  
Co-PI: Kenneth Conner, PsyD  
Site Investigator: John Crilly, PhD  
Status: COMPLETE

US Department of Veterans Health Affairs, Office of Information and Technology, Greenfield Incubation Award for Health Information Technology Innovation: Total Grant: \$150,000  
“Outcomes-Based Prescribing”  
06/01/2009 – 5/31/2011  
PI: John Crilly, PhD  
Co-PI: Diane Niemann, VISN2 CIO

Status: COMPLETE

New York State Office of Mental Health: Total Grant: \$37,000  
"Community-based Surveillance for Health Outcomes and Service Utilization", 1/01/2008 – 12/31/2008  
PI: John Crilly, PhD  
Co-PI: Eric Caine, MD  
Status: COMPLETE

New York State Office of Mental Health: Total Grant: \$30,000  
"Review of Acute Services Documentation for Patients at Elevated Risk for Suicide", 1/01/2007 – 12/31/2007  
PI: John Crilly, PhD  
Co-PI: Eric Caine, MD  
Status: COMPLETE

### Awards

September, 2012: "Outcomes Based Prescribing" awarded as Top Government IT Innovation by InformationWeek500

### Peer Reviewed Publications

#### In Process:

Chitaphong K, **Crilly JF**. Engaging military students: Addressing the challenges of maximizing involvement of returning OEF/OIF Veterans in VA higher education benefits. Military Health.

**Crilly, JF**, Conner K, Beutrais A, Silenzio V. The Next Generation of Psychological Autopsy Studies. Part 3. Electronic Communications. Suicide and Life Threatening Behaviors.

#### Submitted, Under Review:

**Crilly JF**, Luu LCT. Outcomes-Based Prescribing: A Novel Use of Electronic Health Record Data to Inform Patient and Clinician Treatment Choices. British Journal of Medical Informatics.

**Crilly JF**, Keefe RH, Volpe F, Taylor M. Advancing online behavioral health treatment in non-urban/rural areas. Community Mental Health Journal.

#### Published:

**Crilly JF** (2013). Building Connections: Strategies to Mitigate Suicide Risk in Civilians and Military Veterans Living in Non-Urban and Rural Areas. In Frontiers of Suicide Treatment, (J. Lavigne, Ed.).

**Crilly JF**, Keefe RH, Volpe F (2011). Use of Electronic Technologies to Promote Community and Personal Health for Individuals Unconnected to Healthcare Systems. American Journal of Public Health, 101(7): 1163-7.

Britton PC, Bossarte R, Lu N, He H, Currier G, **Crilly JF**, Richardson T, Tu X, Knox K (2011). Prevalence, correlates, and symptom profiles of depression among men with a history of military service. Social Psychiatry and Psychiatric Epidemiology, 46(7): 607-14.

**Crilly JF**, Lewis J (2010). Internet-Based Psychiatric Interventions: Applications for Rural Veterans at Risk for Suicide. Proceedings of the International Conference on Society and Information Technology, April.

Erickson S, Lamberti S, Nihalani N, **Crilly J**, Weisman R, Desai R (2009). Predictors of Arrest During Forensic Assertive Community Treatment. Psychiatric Services, 60(6): 834-7.

**Crilly JF**, Caine ED, Lamberti SJ, Brown T, Friedman B (2009). Mental Health Services Utilization and Symptom Prevalence in an Adult Probation Cohort. Psychiatric Services, 60(4): 542-4.

**Crilly JF**. (2008). An Overview of Compulsory, Non-Compulsory, and Coercive Interventions for Treating People with Mental Disorders in the United States. International Journal of Mental Health, 37(3): 57-80.

Wang D, **Crilly JF**, Jaeger LA, Palmer G (2007). Assessing Patient Preferences for Reminder Delivery in a Psychiatry Ambulatory Service. Proceedings of the American Medical Informatics Association, November.

**Crilly JF**. (2007): The history of clozapine and its emergence in the US market: a review and analysis. History of Psychiatry, 18(1): 39-60.

Lamberti JS, Olson D, **Crilly JF**, Olivares T, Williams GC, Tu X, Tang W, Wiener K, Dvorin S, Dietz MB. (2006). Prevalence of the metabolic syndrome among patients receiving clozapine. American Journal of Psychiatry, 163(7): 1273-6.

Lamberti JS, Costea GO, Olson D, **Crilly JF**, Maharaj K, Tu, X, Groman A, Dietz MB, Bushey MP, Olivares T, Wiener K (2005). Diabetes mellitus among outpatients receiving clozapine: prevalence and clinical-demographic correlates. Journal of Clinical Psychiatry, 66(7): 900-6.

**Crilly, JF**. Affecting Change in the Use of Restraint and Seclusion in a State Hospital Setting. University of Rochester Medical School, Masters Thesis: May, 2005.

**Crilly, JF**. Mental Health Services Utilization of People with Symptoms of Mental Illness With And Without Involvement in the Criminal Justice System: Correlates and Estimators to Help Guide Policy and Service Development. University of Rochester Medical School, Doctoral Dissertation: March, 2005.

**Crilly JF**, Cain N, Davidson P. "Risk factors for mood disorders in people with intellectual disability", in Mood Disorders in People with Mental Retardation, Peter Sturkey, Ph.D, Editor. 2005.

Lamberti JS, **Crilly JF**, Maharaj K, Olson D, Wiener K, Dvorin S, Costea GO, Bushey MP, Dietz MB. (2004). Prevalence of diabetes mellitus among outpatients with severe mental disorders receiving atypical antipsychotic drugs. Journal of Clinical Psychiatry, 65(5): 702-706.

Schwarzkopf SB, **Crilly JF**, Silverstein SM. (1999) Therapeutic synergism: optimal pharmacotherapy and psychiatric rehabilitation to enhance functional outcome in schizophrenia. Psychiatric Rehabilitation Skills, 3(1), 124-147.

McFarlane WR, Link B, Dushay R, Marchal J, **Crilly JF**. (1995) Psychoeducational Multiple family groups: four-year relapse outcome in schizophrenia. Family Process, 34(2), 127-144.

Lamberti JS, Schwarzkopf SB, Boutros N, **Crilly JF**, Martin R. (1993) Within-session changes in sensory gating assessed by P50 evoked potentials in normal controls. Progress in Neuropsychopharmacology and Biological Psychiatry, 17(5), 781-791.

Bradt S, **Crilly JF**, Timvik U. (1993) Computer training for the young adult patient with chronic mental illness". Journal of Rehabilitation, July, 51-54.

Kane CF, Testani M, **Crilly JF**, Auberger K, Norton B. (1992) Predicting the need for long-term hospitalization of severely mentally ill young adults. Journal of Hospital and Community Psychiatry, 43(12), 1239-1241.

Schwarzkopf SB, Lamberti JS, **Crilly JF**, Martin B, Hirt J, Holley L. (1991). Combined startle and P50 measures of sensory gating: support for a shared neurophysiology. Society of Biological Psychiatry.

**Crilly JF**. (1986) Analysis of Characteristic Differences and Similarities Between Housed and Homeless Public Assistance Families. Unpublished Masters Thesis, Fordham University Graduate School of Social Service, May, 1986

#### **Academic Presentations**

##### Oral and Poster Presentations

**Crilly JF** (2012) A Novel Use of Electronic Health Records Data to Inform Clinician and Patient Treatment Choices. ViREC online presentation: March 22.

**Crilly JF**, Constans J, Sullivan G (2010). "Health-Related Internet Use by Rural Residents in Veterans Integrated Service Network (VISN) 16 and Central South U.S." American Public Health Association Conference, November, Oral Presentation.

**Crilly JF**, Claassen C, Sullivan G (2010). "Internet Use for Health-Related Needs: Implications for Developing Online Mental Health Interventions for Veterans." American Public Health Association Conference, November, Poster Presentation.

**Crilly JF** (2010). "Potential for Delivering Online Suicide Prevention to At-Risk Veterans." VA Mental Health Conference, July 27.

Chitaphong K, **Crilly JF (2010)**. "Can we Predict Use of Education and Job Training Benefits by Returning OEF/OIF Veterans?" VA Mental Health Conference. Baltimore, July 28.

**Crilly JF** (2010). "Delivering Electronic-Based Mental Health Services: Factors, Considerations, and Cautions." Grand Rounds, University of Arkansas, Department of Psychiatry, June 3.

**Crilly JF** (2010). "Health-Related Internet Use by Residents of VISN 3 and VISN 16" at the 2010 National Meeting on Improving Health Care for Rural Veterans. Poster Presentation.

**Crilly JF** (2010). "Internet-Based Psychiatric Interventions: Applications for Rural Veterans at Risk for Suicide" at the April, 2010 International Conference on Society and Information Technologies. Paper Presentation.

**Crilly JF** (2010). "Therapeutic Use of Coercive Measures." Grand Rounds, Tulane University Department of Psychiatry, January 8.

**Crilly JF** (2009) "Sinking, Swimming, or Just Splashing Around: Facing Motivational Challenges as a Middle Manager." December 16 and 17, VISN 2 Supervisor Live Meeting, Invited Speaker. Oral Presentation.

**Crilly JF**, Lewis J (2009) "Presence of Suicide Prevention Content in Military or Veteran-Related Blogs and Forums" at the November, 2009 American Public Health Association (APHA) Annual Meeting. Oral Presentation.

**Crilly JF** (2009) "Basic Research Process in the VA: Evidence-Based Practice", May, 2009 at Canandaigua VA Medical Center. Oral Presentation.

Luu LC, **Crilly JF**, Newcomer B, Smith S, Cefalu W (2009) "Intermuscular Adipose Tissue in Soleus Muscle is Increased in Type 2 Diabetes" at the June, 2009 American Diabetic Association (ADA) Annual Meeting. Poster Presentation.

**Crilly JF**, Bossarte R, Britton P (2009) "Age differences in Psychological Distress and Mental Health Services Use Among Veterans" at the March, 2009 Behavioral Risk Factor Surveillance System (BRFSS) Annual Meeting. Oral Presentation.

**Crilly JF** (2008). "Alternative Methods for Accessing Individuals Unconnected with the Health Care System: Developing Extant Non-Health Community-based Data for Health Services Intervention Planning". Expert Level Session: 18<sup>th</sup> Annual Summer Institute in Nursing Informatics, University of Maryland: Baltimore, MD, July 17, 2008.

**Crilly JF**, White AM, Keefe R (2007). "An Alternative Model to Bridge Urban Health Disparities and RHIO Benefits". 6<sup>th</sup> Annual International Conference on Urban Health: Baltimore, MD, October 31, 2007. Oral Presentation

Wang D, **Crilly JF**, Jaeger LA, Palmer G (2007). "Assessing Patient Preferences for Reminder Delivery in a Psychiatry Ambulatory Service." American Medical Informatics Association Conference: November 10, 2007. Oral Presentation.

**Crilly JF** (2007) "Future and Outcomes: VA Knowledge and Information Week Lecture": Lecture for the Canandaigua, NY Veterans Affairs, March 29. Oral Presentation.

**Crilly JF**, Wang D, Jaeger LA, Palmer G (2007). "Client Preferences for Reminder Delivery Methods in a Psychiatry Ambulatory Service." Collier Symposium and Presentation, March, 2007. Poster Presentation.

**Crilly JF** (2006) "The history of clozapine and its emergence in the US market": Lecture for the Corner Society of the History of Medicine, November 29. Oral Presentation.

**Crilly JF**, Aldige-Hiday V, Broner N, Currier G. "Are Pre-therapeutic Engagement Techniques in Restrictive Settings Coercive?" American Public Health Association Conference: Boston, MA, November, 2006. Oral Presentation.

**Crilly JF**, Cerulli C, Hall D, Campbell A (2006). Case comparison of one-year mental health court outcomes: unfunded vs. funded courts. American Society of Criminology Conference: Los Angeles, CA, November, 2006. Poster Presentation.

**Crilly JF**, Cerulli C, Hall D, Campbell A (2006). Monroe County Mental Health Court Outcome Evaluation. Collier Symposium and Presentation, March, 2006. Poster Presentation.

**Crilly JF** (2006) "The history of clozapine and its emergence in the US market": Grand Rounds, Rochester Psychiatric Center, February 9. Oral Presentation.

**Crilly JF** (2005) Organized symposium "Evidence-based Practice for Mental Health Services Consumers with Criminal Justice System Involvement" at the December, 2005 American Public Health Association (APHA) Annual Meeting. Oral Presentation.

**Crilly JF** (2005) "Overview of Research on Service Use by People with Mental Disorders Involved in the Criminal Justice System", Symposium, December, 2005 American Public Health Association (APHA) Annual Meeting: Oral Presentation.

Luu LCT, **Crilly JF**, Kasarskis, EJ. (2004) A self-report scale measuring denial in ALS patients and their caregivers. December, 2004, Fifteenth International Symposium on ALS and Motor Neuron Diseases, Philadelphia, PA. Poster Presentation.

**Crilly JF**, Friedman B, Lamberti JS. (2004). Mental health services utilization by mentally ill offenders on probation. November, 2004, American Public Health Association Conference, Washington, DC. Poster Presentation.

Schwarzkopf SB, Badgely J, Light G, Fugle T, Guardinino J, Williams Carol, **Crilly JF**. (2003). State-linked quantitative measures of symptomatology, cognition, and brain electrical activity in the clinical treatment of psychosis. April, 2003, IXth International Congress on Schizophrenia Research, Colorado Springs, CO. Poster Presentation.

Schwarzkopf SB, Badgely J, Light G, Fugle T, Guardinino J, Williams Carol, **Crilly JF**. (2002). Integration of state-linked qualitative measures of symptomatology, cognition, and brain electrical activity in the treatment of psychosis. NYS Office of Mental Health Research Conference, (December, 2002: Poster).

Lamberti JS, **Crilly JF**, Maharaj K, Olson D, Costea O, Bushey P, Quallo H, Dietz M. (2002) Prevalence of Diabetes Mellitus Among Outpatients Receiving Antipsychotic Drugs. October, 2002, Psychiatric Services Conference, Chicago, IL. Poster Presentation.

**Crilly JF**, Burget M, Bellnier T. (2001) Freeing Up the "Tie-Down" Mentality: Adjusting Staff Attitudes Away From Reliance on Restraint and Seclusion. December, 2001 NYS Office of Mental Health Research Conference, Albany, NY. Poster Presentation.

**Crilly JF**, Luu LC. (2001) Qualitative Assessment of Informants' Experience of Mental Illness, Intensive Hospitalization, and Transition Back to Their Community. October, 2001, American Public Health Association Annual Meeting, Atlanta, GA. Poster Presentation.

Schwarzkopf SB, Bowman J, Davenport D, Pierce D, **Crilly JF**, Porosoff G. (2000). "Behavior Tracking Initiative: A Performance Improvement Project from Conceptualization to Implementation" December, 2000, NYS Office of Mental Health Research Conference, Albany, NY. Poster Presentation.

**Crilly JF**, Luu LC, Stapholz B, Smith A. (2000) "Maintaining the Family Unit for Mothers and Young Children" December, 2000, NYS Office of Mental Health Research Conference, Albany, NY. Oral Presentation.

**Crilly JF**. (2000) "Use of a Specialized Inpatient Psychiatric Setting to Divert Clients from Enrollment in a Mandated Outpatient Treatment Program" June 2000, National Research Service Awards (NRSA) Conference, Los Angeles, CA. Oral Presentation.

Ocon R, DiMartino ED, **Crilly JF**. (1998) "Team-Building in Clients With Mental Illness" NYS Office of Mental Health Research Conference (December, 1998: Poster).

**Crilly JF**, DiMartino ED, Mathew T. (1998) "Insight Into Illness: A Detriment or an Enhancement?" Workshop at the 1998 American Psychiatric Association Conference in Toronto, Canada, (June, 1998: Presentation)

**Crilly JF**, D'Anza WF, McCarthy S. (1997) "Characterization of Long-Term Patients in a State Hospital Setting". NYS Office of Mental Health Research Conference (December, 1997: Poster).

**Crilly JF**, Herz MI. (September, 1997) "An intermediate length-of-stay treatment program: Extension of the acute treatment setting for 'revolving door' clients." Invited presentation at "Psychiatric Rehabilitation of Schizophrenia: Current Trends and Future Directions" conference in Rochester, N.Y.

**Crilly JF**, Jackson C, Martlock C, Cunico L. (1996) "Impact of a non-smoking policy on two inpatient programs at a state psychiatric center." NYS Office of Mental Health Research Conference (December, 1996: Poster).

**Crilly JF**, Andrieu C, Jackson C. (1996) "Community success: the impact of prior work history in conjunction with active participation in vocational programs on an intermediate treatment program." NYS Office of Mental Health Research Conference (December, 1996: Poster).

**Crilly JF**, (1996, 1998) Keynote speaker for the Committee to Aid Research to End Schizophrenia (C.A.R.E.S.) annual fund-raising dinner (October 4, 1996 and October 9, 1998) and the Rochester Alliance for the Mentally Ill (A.M.I.) annual meeting (October 5, 1996) on "Current and Future Research in Mental Illnesses".

**Crilly JF**, Herz MI. (1995) "Alternative Inpatient Treatment Setting: 2 Year Follow-up of an Intermediate Length-of-Stay Treatment Program". NYS Office of Mental Health Research Conference (December, 1995).

**Crilly JF**, Herz MI. (1994) "Integrating MICA treatment within an inpatient psychiatric rehabilitation program". NYS Office of Mental Health Research Conference (December, 1994: Poster).

**Crilly JF**, DiMartino E, Herz MI. (1994) "Addressing denial of mental illness within an inpatient psychiatric rehabilitation treatment framework". NYS Office of Mental Health Research Conference (December, 1994: Poster).

**Crilly JF**, Herz MI, Schneider EJ. (1993) "An intermediate length of stay treatment program: Bridging the gap between acute and long-term care". NYS Office of Mental Health Research Conference (December, 1993: Poster).

Herz MI, Lamberti JS, Schwarzkopf SB, **Crilly JF**. (1992) Prodromal symptoms in schizophrenia: a prospective study and review for the International Congress of Schizophrenia Research (April, 1993: Poster).

Lamberti JS, Schwarzkopf SB, **Crilly JF**, Martin R. (1993) Sensory Gating Assessed by P50 Suppression in Normal Controls: Effects of Changing Stimulus Intensity for the International Congress of Schizophrenia Research (April, 1993: Poster).

Schwarzkopf SB, Smith DA, Lamberti SJ, **Crilly JF**, Hirt J, Martin R. (1992) P50 AEP Correlates of Persecutory Ideation and Affective State in Controls: Consistencies with Findings In Clinical Populations for the International Congress of Schizophrenia Research (April, 1993: Presentation).

Schwarzkopf SB, Lamberti JS, **Crilly JF**, Martin R, Mitra T. (1991). "Sensory gating assessed by P50 Evoked Potentials in controls: methodological issues". Presented as a poster session at the American College of Neuropsychopharmacology Conference, (December, 1991: Poster)

Lamberti JS, Schwarzkopf SB, Timvik U, **Crilly JF**, Henrichs MH. (1990) "Weight gain in clozapine-treated schizophrenics". Presented as a poster session at the Schizophrenia Research Conference, (June, 1990: Poster).

**Crilly, JF**, Radio Talk Show Guest Speaker: The Talk Show With Paul Baker (WXXI AM), June 5, 1991. Topic: Schizophrenia

**Andrew F. Cleek, Psy.D.**  
NYU McSilver Institute for Poverty, Policy, and Research  
New York University  
41 East 11th Street, 7th floor  
New York, NY 10003  
Ph: (212) 998-9093  
Email: [andrew.cleek@nyu.edu](mailto:andrew.cleek@nyu.edu)

## **Highlights**

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- 2012: Appointed a Research Assistant Professor, NYU School of Medicine
- 2012: Joined NYU McSilver Institute for Poverty, Policy, and Research as Senior Research Scientist, Executive Officer McSilver-UIBH
- 2012: Led assumption of UIBH into NYU's McSilver Institute for Poverty, Policy, and Research
- 2012: Grew UIBH from a \$90,000 Operating Budget at its founding in 2004 to 1 million dollars of revenue in Fiscal Year 2011-2012
- 2011: Named Interim Executive Director Coordinated Behavioral Care
- 2010: UIBH became a partner in Children's Technical Assistance Center: OMH funded initiative to provide technical assistance to all 350 children's mental health clinics in NYS
- 2010: Partnered with Health and Hospital Corporation on HEAL 17 project to connect 7 UIBH agencies to Interboro RHIO
- 2010: SAMHSA Science to Service Award for Wellness Self-Management (awarded to Center for Practice Innovation at Columbia University)
- 2010: Faculty: Center for Collaborative Inner-City Child Mental Health Services Research: Mt. Sinai School of Medicine
- 2008: Named Interim Executive Director of Integrated Wellness Partners
- 2007: Served as Director on Diabetes Co-Morbidity Initiative: implemented diabetes self-management materials in 19 NYC based providers
- 2006: Co-Authored (with Salerno, Margolies) Wellness Self- Management Workbook; now being used in 100+ New York Agencies
- 2004: Founding Director of the Urban Institute for Behavioral Health

## **Academic Appointments**

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7/12- present	<u>Senior Research Scientist</u> McSilver Institute for Poverty Policy & Research
1/13- present	<u>Research Assistant Professor</u> NYU School of Medicine
1/13-present	<u>Adjunct Lecturer</u> NYU Silver School of Social Work
1/03-8/06	<u>Adjunct Professor</u> Metropolitan College of New York

## **Professional Experience**

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8/04-Present	Director The Urban Institute for Behavioral Health
9/02-9/04	Assistant Psychologist Astor Bronx Day Treatment
8/00-8/02	Assistant Psychologist Astor Early Childhood Programs
8/99-8/00	Psychology Intern The Astor Home for Children

## **Education**

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9/97-12/01	<u>Spalding University, Louisville, KY</u> Psy.D. in Clinical Psychology, o APA-approved Program & Internship o Graduate Citation for Academic Excellence
9/95-8/97	<u>Spalding University, Louisville, KY</u> Master's Degree in Clinical Psychology,
9/91-6/95	<u>California State University at Long Beach, Long Beach, CA</u> Bachelor's Degree in Psychology

## **Current Grant Awards**

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8/13-7/15	Mobile Health Solutions for Behavioral Skill Implementation through Homework National Institute of Mental Health (R34MH100407-01) \$574,000 Co-Investigator (PI: McKay)
1/11-12/15	Clinic Technical Assistance Center NYS Office of Mental Health \$ 5.0 Million Co-Investigator (Directors McKay & Hoagwood)
3/13-5/14	Preparing the Workforce to Serve Homeless Women Veterans & their Families US Veterans Administration \$120,000 Co-Director (Director: McKay)

## **CURRENT CONTRACTS**

2011-Present	Coordinated Behavioral Care Director
2013-2014	YMCA Director
2012-Present	Long Island Behavioral Alliance Director
2012-Present	NAMI Metro Director

## **PAST GRANT AWARDS**

1/11-12/13	HEAL 17 NYS Department of Health Sub to UIBH \$600,000 Sub Contract Director
2011-2012	Knowledge Empowers Youth NYS Office of Mental Health \$50,000 Director of UIBH Sub
2007-2011	Diabetes Co-Morbidity Initiative New York State Health Foundation \$580,000 Director
2008	Implementation of Clubhouse of Suffolk Smoking Cessation Model New York City Department of Health and Mental Hygiene \$30,000 Director
2008	Knowledge Empowers You New York City Department of Health and Mental Hygiene \$30,000 Director
2007	Smoking Cessation Implementation NYS Department of Health \$18,000

	Director
2007	Implementation of COPE Behavioral Parent Training Integrated Children's Services \$15,000 Director
2006	Program Development Grant United Way \$15,000 Director
2005	Program Development Grant United Way \$15,000 Director

## **OTHER POSITIONS**

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- Consultant: National Council for Community Behavioral Health Care (2012-2013)
- Interim Executive Director: Integrated Wellness Partners (2008-2010)
- Interim Executive Director: Coordinated Behavioral Care (2011-2012)
- Faculty: Center for Collaborative Inner-City Child Mental Health Services Research: Mt. Sinai School of Medicine (2010-)
- Integrated Health Track Co-Leader (2010, 2011) NYAPRS Annual Conference. Kerhonkson, NY.
- Consultant: Mt. Sinai School of Medicine (2008-2011)
- Committee Member: OASAS Cultural Competence Certification Curriculum Development Committee (2006-2007)
- Steering Committee Member: SAMHSA funded Core Shelter Services for Women with Serious Mental Illness Initiative (2005- 2010)

## **AWARDS**

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2010	SAMHSA Science to Service Award for Wellness Self-Management (awarded to Center for Practice Innovation at Columbia University)
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## **TRAININGS CONDUCTED**

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- Wellness Self-Management
- Knowledge Empowers You (WSM for Transition Aged Youth)
- Multiple Family Groups
- Diabetes Self-Management

## **PEER REVIEWED PUBLICATIONS**

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Vu, C., Mercado, M., Fuss, A., Peri, D., **Cleek, A.**, Cleek, E. (2014). The Business Efficiencies and Effectiveness Project: A Learning Collaborative to Improve Business Practices for Mental Health Clinics. (in Review)

Acri, M., Mercado, M., **Cleek, A.**, Dean Asseal, M., McKay, M., Hoagwood, K., Franco, L. Salerno, A. (2014). The Clinic Technical Assistance Center: Building Capacity in New York State's Child Public Mental Health System (in Review)

Chor, K., Olin, S., Weaver, J., **Cleek, A.**, McKay, M., Hoagwood, K., Horwitz. (2013). Characterizing Clinic Adoption in Child Mental Health Initiatives in New York State. (In Press)

Hoagwood, K., Olin, S., & **Cleek, A.** (2013). Beyond Context to the Skyline: Thinking in 3D. Administration and Policy in Mental Health and Mental Health Services Research, 20: 23-28.

Jeanie Tse, MD, FRCPC; Elisa Chow, PhD; Rosemarie Sultana-Cordero, MA, LMHC; Marcia Titus-Prescott, RN; Ruth Chiles, RD; **Andrew Cleek, PsyD**; and Elizabeth Cleek, PsyD. (2011). Motivation-Based Interventions for Obesity in Serious Mental Illness. *Psychiatric Annals* 41(10): 473-477.

Salerno, A., Margolies, P., **Cleek, A.**, Pollock, M., Gopalan, G., Jackson, C. (2011). Wellness Self-Management: An Adaptation of the Illness Management and Recovery Practice in New York State, *Psychiatric Services* 62: 456-458.

**Cleek, A. F.** (2002). The Development of the Accord Program: A high school counseling program. *Dissertation Abstracts International: Section B: The Sciences & Engineering*, 62(10-B). [University Microfilms]

## **Treatment Manuals**

Salerno, A., Cleek A., Fuss, A., Beharie, N. (2012). *Knowledge Empowers You*, 2<sup>nd</sup>.. Albany, New York, New York State Office of Mental Health.

Salerno, A., Margolies, P., Cleek A., Wisdom, J., Perez, M. (2009). *Knowledge Empowers You: The Road to Wellness*. Albany, New York, New York State Office of Mental Health.

Salerno A., Margolies P., Cleek, A. (2006, 2008) *Wellness Self-Management Personal Workbook*. Albany, NY, New York State Office of Mental Health & Urban Institute for Behavioral Health

## **PRESENTATIONS**

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Cleek, A., Beharie, N., Fuss, A. (2013). Knowledge Empowers You: Empowering youth to make decisions that work for them. OMH/Children's Mental Health Coalition Conference. Saratoga Springs, NY

Cleek, A., Mercado, M., Fuss, A. (2013). Using Data in a transformed behavioral health system. OMH/Children's Mental Health Coalition Conference. Saratoga Springs, NY

Cleek, A., Weisof, G., Lisio C. (2013). Clinics Place in an Evolving Healthcare System. New York State Association of Psychiatric Rehabilitation Annual Executive Seminar. Albany, NY.

McGuirk J., Cleek, A. (2012). Preparing Outpatient Mental Health Clinics for a Challenging Future-Integrating Practice and Business Efficiencies. Preparing for a Changing Primary and Behavioral Healthcare System: Cultivating Knowledge & Skills to Meet the Challenge. New York, NY.

McGuirk J., Cleek, A. (2012). Preparing Children's Outpatient Mental Health Clinics for a Challenging Future. New York State Coalition for Children's Mental Health Annual Public Policy Forum. Albany, NY

Cleek, A., McKay, M. (2012). The 4R's and 2S's: Research-informed Practices to Treat Children & Strengthen Families. 2012 Fall Behavioral Healthcare Meeting - Changing Tides in the Behavioral Health System: Adapt, Evolve, and Thrive. Hamilton, NJ.

Hoagwood, K., Mckay, M., Salerno, A., Cleek, A. (2012). Sharing Challenges of Child Serving Behavioral Health Organizations. 42<sup>nd</sup> Annual National Council Mental Health and Addictions Conference, Chicago, IL.

Cleek, A., Gorges, A., Jarvis, D., Rosenthal, H., Schwartz, E. (2012). The Journey Begins: From Behavioral Health Centers to Health Homes. 42<sup>nd</sup> Annual National Council Mental Health and Addictions Conference, Chicago, IL.

McKay, M., Cleek, A., Salerno, A. (2012). The 4r's and 2s's. Research informed practices to treat children and strengthen families. 42<sup>nd</sup> Annual National Council Mental Health and Addictions Conference, Chicago, IL.

Sheppard, Pojman, Cleek, Hodges, & Haen (2012). Evidence-based group practice with children and adolescents. 2012 American Group Psychotherapy Association Conference, New York, NY.

Cleek, A., Forquer, S., Sheola, R. (2011). Medicaid Transformation: The role of Behavioral Health Organizations. ACL Annual Meeting, Saratoga, NY.

Cleek, A., Cleek, E., Mittleman, M. (2011). Low-cost Technology Driven Solutions to Improve Your Practice. 41<sup>st</sup> Annual National Council Mental Health & Addiction Conference. San Diego, CA.

Campanelli, P., Chiles, R., Chow, E., Cleek, A., Cleek, E., Lastella, D., Sultana-Cordero, R., Titus-Prescott, M., Tse, J., Wofsy, M. (2011). Effectiveness of motivation-based interventions to reduce cardiometabolic risk in low-resource psychiatric settings. Scientific and clinical report, Annual Meeting of the American Psychiatric Association, Honolulu, HI.

Cleek, A., Mills, D., Mimmagh, C., Reil, M., Silver, J., Stone, E., Wimmer, J. (2010). Innovations in Integrated Physical and Behavioral Health Care. New York State Association of Psychiatric Rehabilitation Annual Executive Seminar. Albany, NY.

Cleek, A., Tse, J., Sultana Cordero, R. (2010). Approaches to Working with Disparate Populations. CDC Diabetes Translation Conference 2010. Kansas City, MO.

Cleek, A., Cruz, C., Downes, B., Forquer, S., Galbreath, Manderscheid, R., Magnabosco, J. (2010) Emerging and Senior Leaders Dialogue Panel, ACHMHA Sante Fe Summit. Sante Fe, NM.

Colonna, D., Margolies, P., Salerno, A., Cleek, A. (2010) Recovery without Health Isn't Recovery at All. The National Council for Community Behavioral Healthcare 40th Annual Conference. Orlando, FL.

Campanelli, P., Cleek, A., Chow, E., Mills, D., Tse, J., LaStella, D., & Sultana-Cordero, R. (2009). Pre Conference Institute: Integrating Mental Health and Health Utilizing Evidence Based and Best Practices: A Format for Residential and Non-Residential Settings. CLAIMH 30th Annual Conference. Bolting Landing, NY.

Cleek, A., McKenna, S., Mills, D., Rutter, S. (2009). Integrated Models in Health and Behavioral Health Care: The ICL & FEGS CIDP Projects. NYAPRS 27<sup>th</sup> Annual Conference. Kerhonkson, NY.

Cleek, A., Puff, A., Reil, M., Rutter, S., Silver, J. (2009). Emerging Models of Integrated Health and Behavioral Health Care. New York State Association of Psychiatric Rehabilitation Annual Executive Seminar. Albany, NY.

Wale, J., Lewis-Fernandez, R., Cleek, A., Brennan, W. (2008). Health and Mental Health Integration for Latinos/as Affected by Mental Illness. Second Annual Latino Mental Health Conference. New York, NY.

Cleek, A., Margolies, P., and Salerno, A. (2008). Wellness Self-Management: What is it? Why is it important? How can you use it in your organization? New York State Association of Psychiatric Rehabilitation Annual Conference. Ellenville, NY.

Cleek, A., Tse, J., and Campanelli, P. (2008). The treatment of adults with serious mental illness and diabetes. The American Psychological Association 116<sup>th</sup> Annual Convention. Boston, MA.

Cleek, A., Margolies, P., Salerno, A. (2008). Implementing Evidence Based Practices: Strategies to start, sustain, and spread innovations. The National Council for Community Behavioral Healthcare 38th Annual Conference. Boston, MA.

Campanelli P., Cleek, A (2008). Managing Diabetes in Community Settings. New York State Association of Psychiatric Rehabilitation Annual Executive Seminar. Albany, NY.

Kealey, E., Salerno, A., Margolies, P., Finnerty, M., and Cleek, A. (2008). *The use of learning collaboratives to promote implementation of evidence-based practices in New York State.* Presentation at the 18<sup>th</sup> Annual Conference on State Mental Health Agency Services Research, Program Evaluation and Policy, National Association of State Mental Health Program Directors Research Institute, Arlington, VA.

Beitchman P., Campanelli P., Cleek, A. (2007). Integrating Mental and Physical Healthcare. New York State Association of Psychiatric Rehabilitation Annual Conference. Ellenville, NY.

Cleek, A., Margolies, P., Salerno, A. (2007). Wellness Self-Management: Findings from UIBH initiative and plans for a statewide rollout. New York State Association of Psychiatric Rehabilitation Annual Conference. Ellenville, NY.

Ades, Y., Cleek, A., Louison, A.M., Orlando, J. (2006, October). Community Based Service Models for Forensic Consumers. Quality in Urban Behavioral Health: from Vision to Practice Conference. New York, NY.

Cleek, A., Margolies, P., Salerno, A. (2006, October). Wellness Self-Management Initiative: A Model for Private/ Public Collaboration. Quality in Urban Behavioral Health: from Vision to Practice Conference. New York, NY.

Cleek, A., Goldberg, H, Kamnitzer, D, Nagel, L, Skoraszewski, M. (2006, June). Maximizing success rates for adults with chronic mental illness living in supportive housing: The implementation of the supported housing task force. 6<sup>th</sup> Annual New York State Supportive Housing Conference. New York, NY.

Cleek, A.F. (2005, June). *The Development, Structure, & Mission of UIBH: Bridging the gap between scientific discovery and culturally competent real world applications*. 2005 Joint National Conference on Mental Health Block Grant & National Conference on Mental Health Statistics, Washington DC.

Cleek, A.F. (2005, March). *The Urban Institute for Behavioral Health of New York City: A model for Transformational Change*. Poster session presented at the 2005 American College of Mental Health Administrators- 2005 Sante Fe Summit, Sante Fe, NM

Cleek, A.F. (2005). *Ethics in the workplace*. The Institute for Community Living, Inc. Management Workshop, Brooklyn, NY.

Cleek, A. F., & Merry R. (2001) *Safe Havens Essentials*. In Service Training, Astor Home For Children, Poughkeepsie, NY.

Cleek, A. F. (2001). *What to do if a parent of a child is suicidal or homicidal*. In Service Training, Astor Home For Children, Poughkeepsie, NY.

Cleek, A. F., & Caudill, T. (2000). *The effects of domestic violence on families and children*. In Service Training, Astor Home For Children, Poughkeepsie, NY.

Crenshaw, D., Caudill, T., Cleek, A. F., Manning, M. K., Payne, K., & Sud, M. (2000). *Difficult Moments in Play Therapy*. New York Association for Play Therapy Annual Conference, Fishkill, NY.

Cleek, A. F., & Price, J. L. (1999). *Accord Program Needs Assessment*. Presentation of data from multi-stage needs assessment for a high school counseling program to school and program administration, Louisville, KY.

Cleek, A. F., et. al. (1998) *Using Supervision Effectively in Practica*. Colloquium, Spalding University, Louisville, KY.

Cleek, A. F. (1998) *Working in the Family Builders Model*. Colloquium, Catholic Charities, Louisville, KY.

# Micaela F. Mercado

214 West 96<sup>th</sup> St, Apt. 4E NY, NY 10012   [mm6539@nyu.edu](mailto:mm6539@nyu.edu)

## EDUCATION

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- May 2012 **Ph.D.** in Social Work, University of North Carolina at Chapel Hill  
May 2007 **M.S.W.**, Brown School of Social Work, Washington University in St. Louis  
May 2005 **B.A.**, Nova Southeastern University, Ft. Lauderdale, FL

## TEACHING EXPERIENCES

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- 2014 Guest Lecturer: Data Driven Performance, NYAPRS  
2013 Guest Lecturer: Managing Change in Primary & Behavioral Health Settings, NYU  
2013 Guest Lecturer: McSilver Institute for Poverty Policy and Research, NYU  
2012 Guest Lecturer: Community Based Fieldwork, Bank Street College of Education  
2012 Instructor: Evidence-based Practice Workshop, Zone 126 a Project of Rockefeller Philanthropy Advisors, New York, NY  
2010 Teaching Practicum: SOWO 530, Foundations of Social Welfare and Social Work, University of North Carolina at Chapel Hill  
2010 Guest Lecturer: SOWO 492, Seminar in Service Learning, University of North Carolina at Chapel Hill  
2005 Instructor: Statistical Analysis using SPSS, Nova Southeastern University, Ft. Lauderdale, FL  
2005 Facilitator: Psi Chi Honor Society research teams, Nova Southeastern University, Ft. Lauderdale, FL

## GRANTS

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New York State Health Foundation – Co-PI. – \$25,000 - Awarded August 2013  
Dept. of Education, Grant: 84.215P – \$500,000 – Awarded Jan. 2012

## PROFESSIONAL SKILLS

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### Computer Skills

Proficient in AMOS, ATLAS, SPSS, SAS, STATA, GIS, R, Mplus, Microsoft Office, Crystal Reports, Tableau

### Methodological and Statistical Skills

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|---|--|
| Research methods in social interventions    | Structural equation modeling           |
| Measurement in social intervention research | Categorical data analysis              |
| Development of social interventions         | Multiple regression analysis           |
| Propensity score analysis                   | Multilevel mixed linear model analysis |
| Qualitative data analysis                   | Latent class analysis                  |

### Language Skills

Proficient in spoken and written Spanish and French

## Professional Training

- 2013 Innovative Information Resources -Crystal Reports, NY  
2012 Social Solutions 2012 User Conference, NY, NY  
2012 Social Solutions, Promise Neighborhood Institute, & Policy Link, NY, NY  
2011 Center for Faculty Excellence, University of North Carolina at Chapel Hill  
2011 Teaching and Learning Symposium, University of North Carolina at Chapel Hill

## Professional Experience

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- 2013-Present **Research Associate & Data Analytics Officer**, McSilver Institute for Poverty Policy and Research, New York University, New York, NY
- Develop, manage, and implement data collection protocols for research and program evaluation projects for the McSilver Institute and External Partner grants and contracts
  - Manage and provide professional development to undergraduate and graduate research assistants
  - Write federal, state, foundation, and research (NIMH, NIH, IES, DOE) grants
  - Write and submit articles to peer-reviewed journals
  - Prepare and present at national scientific conferences
  - Conduct quantitative and qualitative methods and analyses
  - Provide consultation for program implementation and data analytics
- 2013-Present **Research Consultant**, Rockefeller Philanthropy Advisors, Elmezzi Foundation, Zone 126 Promise Neighborhood, New York City, NY
- 2011-Present **Research Consultant**, Young Adults and Post-Secondary Education Policy Area, MDRC, New York City, NY
- Dec. 2011-  
2013 **Director of Research and Evaluation, Zone 126** a project of Rockefeller Philanthropy Advisors, New York, NY
- Train and manage a team for preliminary data collection in a low-income community for needs assessment project
  - Identify community and student needs based on segmentation analysis
  - Develop, manage, and implement longitudinal database linking data among 25 partner service providers serving over 3,000 children
  - Manage evaluations of community –based projects including a community grant program and community retreat
  - Research, develop and lead evidence-based/best-practice workshops for local service providers and community residents
  - Develop and manage capacity-building project to assess and report the capacity of service providers to host evidence-based practices
  - Develop pre- and post-assessments for service providers
- 2010-2011 **Principal Investigator, State and Institutional Policies Affecting Student Educational Outcomes**, School of Social Work, University of North Carolina at Chapel Hill
- 2008-2011 **Principal Investigator, Sources of Social Capital Among High School Youth**, School of Social Work, University of North Carolina at Chapel Hill
- 2008-2010 **Research Project Coordinator, CareerStart**, School of Social Work, University of North Carolina at Chapel Hill
- 2009 **Policy Research Fellow, Policy Analysis and Research: Higher Education**, Jobs for the Future, Washington, DC
- 2009 **Field Interviewer, New Immigrant Study**, Abt SRBI Inc., Washington, DC
- 2007-2009 **Certified Bilingual Field Interviewer, National Survey on Drug Use and Health**, Durham, NC, Research Triangle Institute International
- 2007 **Program Coordinator**, Save the Children, La Paz, Bolivia

2006-2007	<b>Certified Bilingual Field Interviewer</b> , <i>Early Childhood Longitudinal Survey-Birth Cohort</i> , St. Louis, MO, Research Triangle Institute International
2006	<b>Project Evaluator</b> , Philliber Research Associates, St. Louis, MO
2006	<b>Field Interviewer</b> , <i>American Dream Demonstration</i> , Center for Social Development, Brown School of Social Work, University of Washington in St. Louis, MO
2003-2005	<b>Certified Bilingual Field Interviewer</b> , <i>National Survey on Drug Use and Health</i> , Ft. Lauderdale, FL, Research Triangle Institute International
2002-2003	<b>Certified Field Interviewer</b> , <i>One Community Partnership</i> , University of South Florida, Ft. Lauderdale, FL

## Publications

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### Peer-Reviewed Articles

- Small, L., Mercado, M., Gopalan, G., Pardo, G., Mellins, C., & McKay, M. Enhancing the emotional wellbeing of perinatally HIV infected youth across global contexts. In press. *Global Social Welfare*.
- Stern, S., Walsh, M., **Mercado, M.**, & Lowe, E. When they call, will they come? A contextually responsive approach for engaging multi-stressed families in an urban child mental health center. In press. *Research on Social Work Practice*
- Woolley, M., Rose, R., & **Mercado, M.** (2013). Teacher teaching differently: A qualitative study of implementation fidelity to professional development. *Journal of Education and Training Studies*, (1), 55-68.
- Orthner, D., Jones-Sanpei, H., Rose, R., & **Mercado, M.**, & Akos, P. (2010). CareerStart: A middle grades strategy for promoting student school engagement and academic success. *Studia Sociologia*, (1), 137-153.
- Orthner, D., Akos, P., Rose, R., Jones-Sanpei, H., **Mercado, M.**, & Woolley, M. (2010). CareerStart: A middle-school student engagement and academic achievement program. *Children and Schools*, (32), 223-234.

### Book Chapters

- Barbarin, O., & **Mercado, M.**, Hgjidsuren, D. (2009). Development of tolerance and respect for diversity in children in the context of immigration. In L. Grigorenko & R. Takanishi, (Eds.), *Immigration, diversity, and education* (pp.279-288). NY: Routledge.

### Peer-reviewed articles under review or in preparation

- Vu, C., **Mercado, M.**, Fuss., A., et al. The evolution of the Clinic Technical Assistance Center. In preparation. Anticipated journal – *Research on Social Work Practice*.
- Vu, C., **Mercado, M.**, & Fuss., et al. Addressing the gap between clinical and business practices through a learning collaborative model. In preparation. Anticipated journal – *Administration in Policy in Service and Mental Health Research*.
- Mercado, M.** Exploring socio-cognitive and behavioral skills in the workplace: A qualitative study of perceived college readiness among high school students. In preparation. Anticipated journal – *The High School Journal*
- Mercado, M.**, Chapman, M., & Shenyang, G. Using propensity score weighting to examine the effects of learning communities on engagement among community college students. In preparation. Anticipated journal – *Research in Higher Education*.
- Mercado, M.**, Chapman, M., & Shenyang, G. A multilevel study examining first-generation college status, academic and social integration, and educational outcomes among community college students. In preparation. Anticipated journal – *Teachers College Record*.

**Mercado, M.** Advancing theory: An integrated-theoretical model for understanding the effects of academic and social experiences on educational outcomes among community college students. In preparation. Anticipated journal – *Theoretical Front in Higher Education*.

**Mercado, M.** The intricacies of state and institutional policies affecting student placement in community college courses. In preparation. Anticipated journal – *Higher Education Management and Policy*.

## **Conference Presentations**

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Vu, C., **Mercado, M.**, & Fuss., A. (2014, March 3). *Addressing the gap between clinical and Business practices through a learning collaborative model*. Oral presentation, 27<sup>th</sup> Annual Children's Mental Health Research and Policy Conference, Tampa, FL.

**Mercado, M.**, Osuji, H., McKay, M. (2014, January 18). *Do community HIV mentors trained in evidence-based, youth-focused HIV prevention program have an effect on youth outcomes?* Oral presentation, 18th Annual Conference of the Society for Social Work and Research, San Antonio, TX.

**Mercado, M.**, & Baharie, N. (2014, January 17). *Examining the association between food insecurity and children's educational outcomes*. Oral presentation, 18th Annual Conference of the Society for Social Work and Research, San Antonio, TX.

Cleek, A., **Mercado, M.**, Fuss, A. (2013, December 3). Using data in a transformed behavioral health system. Oral presentation. Office of Mental Health Children's Mental Health Coaling Conference, Saratoga, NY.

**Mercado, M.** (2012, March 31). *A multilevel study examining first-generation status, academic and social integration, and educational outcomes among community colleges students*. Oral presentation, Teachers' College, Columbia University, New York, NY.

**Mercado, M.** (2012, March 31). *Examining the effects of learning communities on engagement among community college students*. Oral presentation, Teachers' College, Columbia University, New York, NY.

**Mercado, M.** (2012, January 11). *A multilevel study examining first-generation status, academic and social integration, and educational outcomes among community colleges students*. Oral presentation, 16th Annual Conference of the Society for Social Work and Research, Washington, DC.

Chapman, M. & **Mercado, M.** (2012, January 11). *Gang activity among new immigrant Latina adolescents*. Oral presentation, 16th Annual Conference SSWR, Washington, DC.

**Mercado, M.** (2011, October 8). *Examining the effects of learning communities on engagement among community college students*. Oral presentation, National Conference on Students in Transition. St. Louis, MO.

**Mercado, M.** (2011, March 31). *Exploring socio-cognitive and behavioral skills in the workplace: A qualitative study of perceived college readiness among high school students*. Oral presentation, UNC Research Conference, University of North Carolina at Chapel Hill

**Mercado, M.** (2011, May 2). *Examining the community college experience: The effects of academic and social integration on students' educational outcomes*. Accepted Oral presentation, Community College Interdisciplinary Research Forum, University of Michigan, MI.

**Mercado, M.** (2011, April 15). *Understanding the community college experience: The effects of integration on students' educational outcomes*. Oral presentation, Harvard Graduate School of Education 16<sup>th</sup> Annual Research Conference, Boston, MA.

- Mercado, M.** (2011, April 15). *Examining the effects of academic and social interventions on community colleges students' engagement*. Oral presentation, Harvard Graduate School of Education 16<sup>th</sup> Annual Research Conference, Boston, MA.
- Mercado, M.** (2011, June 12) . *Understanding the community college experience: The effects of integration on students' educational outcomes*. Oral presentation, International Conference on Student Success. Educational Policy Institute, San Diego, CA.
- Orthner, D., Akos, P., Rose, R., Jones-Sanpei, H., & **Mercado, M.** (2010, January 15). *Relevance in the curriculum: The effect of teacher provided career examples on the math and reading performance of 8th grade students*. Oral presentation, 14th Annual Conference of the Society for Social Work and Research, San Francisco, CA.
- Orthner, D., Akos, P., Rose, R., & **Mercado, M.** (2010, January 15). *Promoting school engagement and valuing: The effects of teacher-provided career examples on intermediate indicators of student academic success*. Oral presentation, 14th Annual Conference of the Society for Social Work and Research, San Francisco, CA.
- Pettus, C., Washington, T., Nwabuzor, I., & **Mercado, M.** (2008, October 31). *The search for theory in social work research: A social identity perspective*. Oral presentation, 54<sup>th</sup> Annual Council of Social Work Education Conference, Philadelphia, PA.
- Mercado, M.** (2007, March). *Theoretical approach: Child support savings accounts*. Poster presentation, First Annual National Fatherhood & Families Conference, Fathers and Families Coalition, Inc., Phoenix, AZ.
- Mercado, M.** (2005, April). *A cross-cultural perspective of cohabitation among young adults*. Oral presentation, Student Research Symposium, Nova Southeastern University, FL.
- Silver, M., & **Mercado, M.** (2005, March). *The dynamics of intergenerational relationship change in emerging adulthood*. Oral presentation, Society for Research on Adolescence, Second Annual Conference on Emerging Adulthood, Miami, FL.

## **Honors and Awards**

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- |           |   |
|-----------|---|
| 2007-2012 | <b>Royster Fellow</b> , University of North Carolina at Chapel Hill   |
| 2011      | <b>Dissertation Fellowship</b> , MDRC, New York City, NY  |
| 2011      | <b>Future Faculty Fellowship</b> , University of North Carolina at Chapel Hill  |
| 2011      | <b>Social Science Presentation Award</b> , University of North Carolina at Chapel Hill  |
| 2009      | <b>Policy Fellow</b> , Education Pioneers, Washington, DC   |
| 2006-2007 | <b>Shanti Khinduka Fellowship for International Social Work Education</b> , Brown School of Social Work, Washington University in St. Louis |
| 2006-2007 | <b>Graduate Fellow</b> , Center for Latino Family Research, Washington University in St. Louis  |
| 2005-2007 | <b>Whitney M. Young Jr. Fellow</b> , Brown School of Social Work, Washington University in St. Louis  |
| 2005      | <b>James Farquhar Award</b> , Nova Southeastern University, Ft. Lauderdale, FL  |

## **Reviewer**

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- Journal of International Students, 2014-Present  
The High School Journal, 2014-Present  
Global Social Welfare: Research, Policy, and Practice (GSWE), 2013-Present  
National Conference on Students in Transition, 2012-Present
-

Ashley Fuss, L.M.S.W



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## EDUCATION

### **FORDHAM UNIVERSITY GRADUATE SCHOOL OF SOCIAL SERVICE** New York, NY

Master of Social Work, May 2011

Concentration in Research

Thesis: Effects of Parent-Child Discrepancies of Family Functioning on Youth Disruptive Behavior: A Multiple Family Group Intervention

### **QUEENS COLLEGE, CITY UNIVERSITY OF NEW YORK**

Flushing, NY

Bachelors of Arts Degree in Sociology, May 2008

Major in Sociology, Minor in Journalism

Research project: Should Plan B be sold without a prescription?

## PEER REVIEWED PUBLICATIONS

*Accepted*

1. Gopalan, G., Bannon, W., Dean-Assael, K., **Fuss, A.**, Gardner, L., LaBarbera, B., & McKay, M. (2011). Multiple Family Groups: An engaging intervention for child welfare involved families. *Child Welfare*. NIHMS ID # 316860
2. McKay, M.M., Gopalan, G., Franco, L., Dean-Assael, K., Chacko, A., Jackson, J., & **Fuss, A.** (2011). A collaboratively designed child mental health service model: Multiple Family Groups for urban children with conduct difficulties. *Research in Social Work Practice*. NIHMS ID # 287779
3. Gopalan, G., Alicea, S., Conover, K., **Fuss, A.**, Garner, L., Pardo, G., & McKay, M. (2012). Step-Up: Engagement strategies and attendance rates for an after school mental health program. *Journal of Early Adolescence*.
4. Gopalan, G., **Fuss, A.**, & Wisdom, J. (In Press). Multiple family groups to reduce child behavior difficulties: Influences on retention for Child Welfare-Involved Caregivers. *Research on Social Work Practice*.
5. Stephens, T., McGuire-Schwartz, M., Rotko, L., **Fuss, A.**, McKay, M. (In Press) A Learning Collaborative Supporting the Implementation of an Evidence-Informed Program, the “4Rs and 2Ss for Children with Conduct Difficulties and their Families.” *Journal of Evidence-Based Social Work*.

### *Under Review*

Gopalan, G., Small, L., **Fuss, A.**, Bowman, M., Jackson, J., Marcus, S., McKay, M. (Under Review) Multiple Family Groups to reduce child behavior difficulties: Moderating effects of child welfare status on child outcomes.

### *In Preparation*

Vu, C.M., Mercado, M., **Fuss, A.**, Peri, D., McKay, M. (In preparation). Addressing the Gap between Clinical and Business Practices through a Learning Collaborative Model.

Mercado, M., **Fuss, A.**, Ali, S., Franco, L., Dean-Assael, K., McKay, M. (In preparation). Strengthening Core Competencies for Social Workers working with Veterans and their Families.

Mercado, M., **Fuss, A.**, Peri, D., Cleek, E., McKay, M. (In preparation). Assessing Clinic Finances to Improve Business Operations through Financial Management Trainings.

Acri, M., Mercado, M., Franco, L., Dean-Assael, K., Beharie, N., **Fuss, A.**, Cleek, A., Salerno, A., McKay, M. (In preparation). Developing a Clinic Technical Assistance Center during Health Care Reform

## **PROFESSIONAL REPORTS**

**Fuss, A.**, Mercado, M., Cleek, A. (2013). An Evaluation Report of the Leadership Development Institute's Parents Leading Advocacy Now (PLAN) Training. Funded by NAMI-NYC Metro.

**Fuss, A.**, Mercado, M., Cleek, A. (2013). An Evaluation of the Family Support Network Learning Collaborative. Funded by NAMI-NYC Metro.

Mercado, M., **Fuss, A.**, Cleek, A., (2013) Preliminary Findings of NAMI's Peer-to-Peer Program: Wellness-Training Supplement Pilot. Funded by NAMI-NYC Metro.

Mercado, M., **Fuss, A.**, Kleinhardt, E., Ali, S. (2013) The Clinic Technical Assistance Center: Strategic Planning Data Book. Funded by New York State Office of Mental Health

Beharie, N., **Fuss, A.**, Szkola, J., Mercado, M. (2013) Presbyterian Senior Services: Data Summary Report. Funded by the McSilver Institute

Gopalan ,P., Mercado, M., **Fuss, A.**, Cleek, A. (2013) Preliminary Report of the YMCA's Y Roads Program. Funded by the YMCA.

## **INTERVENTION MANUAL**

Salerno, A. Cleek A., **Fuss, A.**, Beharie, N. (2012). Knowledge Empowers You, 2<sup>nd</sup> Edition. Albany, New York, New York State Office of Mental Health.

## PROFESSIONAL PRESENTATIONS

### *Completed*

**Fuss, A.** (2012, January). Effects of parent-child discrepancies of family functioning on youth disruptive behavior: A multiple family group intervention. Poster presentation for the Society for Social Work and Research (SSWR) 16<sup>th</sup> Annual Conference in Washington, DC.

**Fuss, A.** (2012, October). “Focus on Field: Research” Presented at Fordham University, GSS, Seminar

Gopalan, G., **Fuss, A.**, Wisdom, J. (2013, March). Multiple Family Groups: Factors affecting retention for caregivers involved in the child welfare system. Paper presented at the 26th Annual Children’s Mental Health Research and Policy Conference in Tampa, FL.

Cleek, E., Tse, J., Wofsy, M., **Fuss, A.** (2013, April) Accountability in a changing healthcare system: the role of clinical pathways, outcome measurement and decision support. Presented at the Preconference University Advances in Clinical Treatment and Services for Children at The National Council for Behavioral Health Conference in Las Vegas, NV.

Cleek, A., Mercado, M., **Fuss, A.** (2013, December) Using Data in a Transformed Behavioral Health System. Presented at the Children’s Mental Health Services Staff Development Training, Forum Pathways to Success: Managing Total Wellness in Saratoga, NY.

Cleek, A., Beharie, N., **Fuss, A.** Salerno, A., (2013, December) Knowledge Empowers You (KEY): Empowering Youth to Make Decisions that Work for Them. Presented at the Children’s Mental Health Services Staff Development Training Forum, Pathways to Success: Managing Total Wellness in Saratoga, NY.

## RESEARCH EXPERIENCE

2012-Present	<b>NEW YORK UNIVERSITY SILVER SCHOOL OF SOCIAL WORK MCSILVER INSTITUTE FOR POVERTY, POLICY AND RESEARCH</b> <i>Junior Research Scientist (Director: Dr. Mary McKay)</i>	New York, NY
	<ul style="list-style-type: none"><li>Contribute to NIMH funded research projects focused on poverty-impacted youth, families and communities</li><li>Analyze data to examine the impact of family and youth outcomes associated with treatment interventions</li><li>Examine the impact of various technical assistance and training programs disseminated from McSilver</li><li>Prepare federal and private grant submissions</li><li>Partner with community-based organizations to implement evaluation protocols within their organizations</li><li>Design program evaluation and research assessment batteries</li><li>Train staff on the collection and use of data</li><li>Prepare data and evaluation reports to partners and funders</li><li>Prepare manuscripts for publication</li><li>Co-design a staff development training for mental health providers working with veterans</li></ul>	

- Conduct focus groups with staff and consumers from community-based organizations
- 2012-Present **THE INSTITUTE FOR COMMUNITY LIVING, INC.** New York, NY  
**SUPPORTIVE SERVICES FOR VETERAN FAMILIES PROGRAM (SSVF)**  
*Evaluation Specialist (Supervisor: Dr. Elizabeth Cleek)*
  - Analyze outcome data to examine the impact the SSVF program has on individuals enrolled in the program
  - Co-develop an evaluation work plan for the SSVF program
  - Prepare evaluation forms for program use
  - Develop program database and data dictionaries
- 2012-Present **UNITED NEIGHBORHOOD HOUSE** New York, NY  
**SILBERMAN SCHOOL OF SOCIAL WORK AT HUNTER COLLEGE**  
*Research Analyst (Principal Investigator: Dr. Mimi Abramovitz)*
  - Conduct statistical analysis to examine members' perceptions of settlement houses
  - Data entry, coding and management
- 2011-2013 **NEW YORK UNIVERSITY** New York, NY  
**SILVER SCHOOL OF SOCIAL WORK**  
*Research Analyst (Principal Investigator: Dr. Geetha Gopalan)*
  - Prepare federal grant application for submission
  - Qualitative interview coding
  - Complete reliability checking
  - Quantitative data analysis
  - Prepare manuscripts for publication
- 2011-2012 **THE URBAN INSTITUTE FOR BEHAVIORAL HEALTH** New York, NY  
*Research Project Coordinator (Director: Dr. Andrew Cleek)*
  - Downstate coordination for the New York State Clinic Technical Assistance Center
  - Dissemination and project management of CTAC initiatives
  - Develop and maintain databases
  - Data management and data analysis
  - Co-author Knowledge Empowers You (KEY) Workbook
  - Manage the implementation of KEY in community-based settings
  - Geo-Mapping
  - Management and submission of network data for New York State Department of Health (NYSDOH) Health Homes' project
- 2011-2011 **MOUNT SINAI SCHOOL OF MEDICINE** New York, NY  
**DEPARTMENT OF PSYCHIATRY AND COMMUNITY MEDICINE**  
*Research Assistant (Principal Investigator: Dr. Geetha Gopalan)*
  - Provide support for overall research project management
  - Prepare recruitment materials for research study
  - Co-design the qualitative Interview Guide
  - Conduct qualitative interviews
  - Qualitative interview coding
  - Complete reliability checking

- Data entry and analysis

2011-2011  
NY

**CHILD WELFARE ORGANIZATION PROJECT**

New York,

***Research Assistant (Principal Investigator: Dr. Geetha Gopalan)***

- Prepare assessment batteries for children and caregivers
- Administer assessment measures to children and caregivers
- Develop database for assessments to be entered
- Data entry and cleaning

2010-2011  
NY

**MOUNT SINAI SCHOOL OF MEDICINE**

New York,

**DEPARTMENT OF PSYCHIATRY AND COMMUNITY MEDICINE**

***Research Social Work Intern (Director: Dr. Mary McKay)***

- Contribute to research projects focused on low-income families with mental health difficulties
- Provide support for overall research project management
- Administer research- based assessments
- Prepare manuscripts for publication
- Coordinated follow-up events for research participants
- Prepare Interim Report to the Robinhood Foundation
- Analyze outcome data, prepare databases, data cleaning, entry and coding
- Conduct home visits
- Co-facilitate a Multiple Family Group for children with behavioral problems

**PROFESSIONAL CLINICAL EXPERIENCE**

2010-2011  
NY

**CHILD WELFARE ORGANIZATION PROJECT**

New York,

***Social Work Intern***

- Co-facilitate a family-based group for children who were reunited with their families from foster care

2009-2010

**AFTER-SCHOOL PROGRAM AT P.S. 86**

Jamaica, NY

**QUEENS COMMUNITY HOUSE**

***Social Work Intern***

- Facilitate social skills activity groups for youth grades 3-6
- Provide individual supportive counseling
- Plan staff development activities,
- Administer program and service evaluation surveys
- Parent outreach activities

**VOLUNTEER EXPERIENCE**

2012-2013

**THE SOLDIERS  
PROJECT            LONG  
ISLAND            CHAPTER  
*Community Volunteer***

## **CERTIFICATION AND PROFESSIONAL AFFILIATION**

Society for Social Work and Research  
New York State Licensed Social  
Worker Veterans Mental Health  
Coalition

## APPENDIX C

### References for RFP

Alemi F, Erdman H, Griva I, Evans CH (2009). Improved statistical methods are needed to advance personalized medicine. *Open Translational Medicine Journal*, January 1; 1: 16–20. doi:10.2174/1876399500901010016

Allegheny County Integrated Children's Services Plan: Fiscal Year 2012-2013. October, 2011.

Allegheny County Mental Health Plan for Adults, Older Adults and Transition-Age Youth with Serious Mental Illness and Co-occurring Disorders: Fiscal Year 2013-2014. May, 2012.

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Begle AM, Dumas JE, Hanson RF (2010). Predicting child abuse potential: an empirical investigation of two theoretical frameworks. *Journal of Clinical Child and Adolescent Psychology*. 39(2): 208-19.

Cherna M (2014). Presentation: Blue Ribbon Commission on Child Protection, Los Angeles County. March 10.

Cicchetti D, Blender JA (2006). A multiple-levels-of-analysis perspective on resilience: implications for the developing brain, neural plasticity, and preventive interventions. *Annals of the NY Academy of Sciences*, 1094: 248-58.

Crilly JF, Luu LCT (in press). Outcomes-based prescribing: a novel use of electronic health record data to inform patient and clinician treatment choices. *British Journal of Medical Informatics*.

Dulmus CN, Nisbet BC (2013). *Person-Centered Recovery Planner for Adults with Serious Mental Illness*. Hoboken, NJ: Wiley.

Efron B, Gong G (1983). A leisurely look at the bootstrap, the jackknife, and cross-validation. *American Journal of Statistics*, 37: 36-48.

Government Accounting Office (GAO). *Human Services: Sustained and Coordinated Efforts Could Facilitate Data Sharing While Protecting Privacy*. Report to Congressional Requestors, GAO-13-106, February, 2013.

Jarvenpaa SL, Shaw TR, Staples DS (2004). Toward contextualized theories of trust: the role of trust in global virtual teams. *Information Systems Research*, 15(3): 250-67.

Foster KA, Stiffman AR (2009). Child welfare workers' adoption of decision support technology. *Journal of Technology in Human Services*, 27(2): 106-26.

Moxey A, Roberson J, Newby D, Hains I, Williamson M, Pearson SA (2010). Computerized decision support for prescribing: provision does not guarantee uptake, *Journal of the American Medical Informatics Association*, 17: 25-33.

Rai A, Patnayakuni R, Seth N (2006). Fir performance impacts of digitally enabled supply chain integration capabilities. *MIS Quarterly*, 30(2): 225-46.

Schwartz D, Kaufman A, Schwartz I (2004). Computational intelligence techniques for risk assessment and decision support. *Children and Youth Services Review*, 26: 1081-95.

Thursky KA, Mahemoffb M (2007). User-centered design techniques for a computerised antibiotic decision support system in an intensive care unit. *International Journal of Medical Informatics*, 76(10): 760-8.

Zandi I (2000). Use of Artificial Neural Network as a Risk Assessment Tool in Preventing Child Abuse. *Neural Networks, 2001. Proceedings. IJCNN '01. International Joint Conference (V.2)*: 1438-42.

### **3. BUDGET AND BUDGET DESCRIPTION**

#### Budget Narrative/Description

1. There are no anticipated revenues as shown in Line Item 1 – Budget Revenue.
2. Line Item 2 outlines budget expenses including personal services and associated agency costs. There will be three staff from Coordinated Care Services, Inc. (CCSI) included on the project and three from NYU-McSilver, described as follows:
  - John Crilly, PhD, MPH, MSW: Principle Investigator. Dr. Crilly's role will be to oversee the entire project. Although he will work closely with Dr. Cleek in these areas, he will be responsible for overseeing the analysis of qualitative data, development and analyses of the predictive model, and all interpretations resulting therefrom. He will be on site to participate in the focus and design groups and assist in the cross-walk collaborations both with NYU and the software developers.
  - TBD: Project Coordinator. The CCSI Project Coordinator will be a Masters-trained, senior-level CCSI employee who has experience in the arenas of direct care, program evaluation, and research with a strong understanding of data and technology. This PC will be responsible for interactions with AC DHS staff to plan logistics in the AC DHS environment and develop and implement focus groups. This PC will run all focus groups and will be responsible for the recording and analysis of the qualitative data in conjunction with Dr. Crilly. This PC will be responsible for maintaining project adherence to the timeline.
  - TBD: Data Analyst. The data analyst will be a Masters-trained Sr. Programmer/Analyst who will be proficient in the statistical software and analyses methods necessary to conduct the work in this proposal. This will include SPSS, SAS, Stata, R, and Atlas (qualitative data analysis software).
3. Each staff member is individually listed with their fully loaded compensation rate which includes costs associated with project time, agency administrative time, vacation and holiday

time including mandated and non-mandated benefits as well as any associated office supplies, office equipment, infrastructure and agency administration and overhead.

4. An estimation of their time required for this project is listed under the FTE column, which is the Full Time Equivalent based on a 40 hour work week. Work tasks included in this estimation are outlined above.

5. The Extended Price column is calculated by multiplying the fully loaded compensation rate by the FTE. The Line Item 2 Subtotal is \$317,925.

6. Line Item 3 summarizes travel and associated costs. Mileage and related ground transportation expenses are calculated along with per diem hotel and meal related expenses. It is anticipated that the Principal and Co-Investigator will travel to Allegheny County on a bi-monthly basis, 2.5 days per trip. Trip duties will include attending focus group meetings, meetings and consultation with AC DHS staff, ensuring overall operation of the project and, later, meeting with software developers. The CCSI and NYU Coordinators will have a total of 14 trips, 2.5 days per trip, to be distributed throughout the year as needed for conducting focus groups and attending meetings with AC DHS staff at all levels. Mileage was calculated using round trip miles and \$0.56/per mile mileage reimbursement. The [US General Services Administration](#) figures were used to calculate per diem travel costs. Greater detail for each staff member is listed below. The Line Item 3 Subtotal is \$38,228.00.

<b>Mileage and other travel</b>	<b>Total</b>
1 staff NYU: 14 trips for 2.5 days each	\$ [REDACTED]
Co-Inv NYU: 1 time bi-monthly for 2.5 days	\$ [REDACTED]
1 staff CCSI : 14 trips for 2.5 days each	\$ [REDACTED]
Princ Inv CCSI: 1 time bi-monthly for 2.5 days	\$ [REDACTED]
<b>Total Mileage and other travel</b>	<b>\$ [REDACTED]</b>

<b>Hotel, meals, etc.</b>	<b>Total</b>
1 staff NYU: 14 trips for 2.5 days, 2.5 nights	\$ [REDACTED]
Co-Inv NYU: 1 time bi-monthly for 2.5 days	\$ [REDACTED]
1 staff CCSI : 14 trips for 2.5 days, 2.5 nights	\$ [REDACTED]
Princ Inv CCSI: 1 time bi-monthly for 2.5 days	\$ [REDACTED]
<b>Total Hotel, meals, etc.</b>	<b>\$ [REDACTED]</b>

APPENDIX A  
PROPOSAL AUTHENTICATION FORM

**TITLE:** Decision Support Tools and Predictive Analytics in Human Services

**DUE DATE: APRIL 18, 2014**

The undersigned hereby offers to furnish and deliver the services as specified in strict accordance with the RFP and scope of proposal, all of which are made a part of this request. This offer is not subject to withdrawal without permission of the County of Allegheny Department of Human Services Director.

**FULL LEGAL COMPANY NAME:** Coordinated Care Services, Inc.

**DOING BUSINESS AS:** Same

**STREET ADDRESS:** 1099 Jay Street, Bldg J

**CITY, STATE AND ZIP CODE:** Rochester, NY 14611

**AUTHORIZED SIGNATURE:** Jonathan Benson

**PRINT NAME:** Jonathan Benson

**TITLE OF AUTHORIZED SIGNER:** Chief Financial Officer

**TELEPHONE #:** 585-328-5190 **FAX #:** 585-328-2511

**WEBSITE URL:** www.ccsi.org

**E-MAIL ADDRESS:** JBenson@ccsi.org

## Chapter 2

### COMPANY INFORMATION

(This information is for tracking purposes only and has no role in the determination of the responsible proposer.)

- Check here if your firm is registered with the Allegheny County Department of Minority, Women and Disadvantaged Business Enterprises
- Check here if your firm is a "Minority Business Enterprise" or "MBE" as defined in the Small Business Act, 15 USC
- Check here if your firm is a "Women Business Enterprise" or "WBE" as defined in the Small Business Act, 15 USC
- Check here if your firm is a "Small Business" as defined by the Small Business Administration (13 C.F.R. 121.201, in most cases, this means a business with 500 or fewer employees)

**NOTE: THIS PAGE MUST BE SUBMITTED WITH YOUR PROPOSAL. ALL PAGES REQUIRES A LIVE SIGNATURE SIGNED IN BLUE INK.**

APPENDIX B  
ABBREVIATED APPLICATION

1. Primary Contacts

President

Chief Executive

Chief Information Officer

Chief Financial Officer

Contract Processing Contact

Name	Ann L. Wildes	WLR	Matthew Benson	Mary Simanton
Email	awildes@ccsi.org		mbenson@ccsi.org	msimanton@ccsi.org
Phone	585-388-5100		585-328-5190	585-613-7629

Note: If you are an individual applying, you may identify yourself for all of the above roles.

2. I/we certify that this /we/this organization is not currently under suspension or debarment by the Commonwealth of Pennsylvania, any other state, county or the federal government.

So certified

3. Have you ever obtained or been denied a performance or fidelity bond, or has your bond ever been revoked?

Yes  No

If yes, explain:

4. Has an application to be an Allegheny County provider/vendor been denied in the past?

Yes  No

If yes, explain:

5. Have you ever filed for bankruptcy?

Yes  No

If yes, explain:

John Bz -

6. Have your paid all taxes for the past years, including but not limited to real estate tax, employer taxes, employee withheld taxes, personal income tax (if individual)?

Yes  No

If yes, explain:

7. Do you have the capability to do electronic billing if required?

Yes  No

If yes, explain:

8. Do you currently carry the insurance (see contract on DHS website) required to enter into a contract with DHS?

Yes  No

If yes, explain:

9. Do you/your staff have valid Pennsylvania driver licenses?

Yes  No

If yes, explain: CESI is a NY based organization. Our staff have valid NYS drivers licenses.

As an authorized signatory for Coordinated Care Services Inc. I hereby certify to the best of my knowledge and belief that the information in this proposal and application is true and accurate.

Signature: J. D. Benson Date: 4/17/14  
Print/Type Name: Jonathan Benson Title: CEO

## COUNTY OF ALLEGHENY M/W/DBE PARTICIPATION WAIVER REQUEST

PROVIDER	Coordinated Care Services, Inc.		
ADDRESS	1099 Jay Street, Bldg J		
CONTACT PERSON	John Crilly		
TELEPHONE NUMBER	585 613-7947		
EMAIL ADDRESS	jcrilly@ccsi.org		
FISCAL YEAR/PERIOD	2014		

In all instances a good faith effort must be made to meet the M/W/DBE contract goals as outlined in Section 3.10.8.8 of the "Minority and Women Business Enterprise Utilization Affirmative Action Requirements" document.

If you plan to perform the entire contract without using M/W/DBE subcontractors and/or suppliers or have not completely met the M/W/DBE goal of 13% MBE 2% WBE, the following must be attached and submitted with this form:

- \* A detailed explanation of your normal business practice
- \* Operation and/or Inventory Profile
- \* An active company supplier/subcontractor diversity policy
- \* Explanation as to why M/W/DBE participation waiver is being requested

Note: The fully completed M/W/DBE Participation Statement must accompany this waiver request, that shows your "Good Faith Effort"

Prepared By: Mary Simonton Title: Contract Coordinator Date: 4/16/16 Signature: Mary Simonton

*John Crilly*

**Documentation to be attached to  
M/W/DBE Participation Waiver Request**

**Business Practices and Operations Profile**

Coordinated Care Services, Inc. (CCSI) is a not-for-profit (501c3) management services firm with a long history of providing support to organizations in the behavioral health and human services fields so that they can improve services for those in need.

CCSI is a team of talented, highly motivated professionals with specialized expertise and an understanding of best and evidence-based practices, coupled with the ability to develop and implement practical solutions that work within our customers' environments.

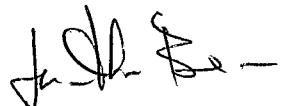
- Our core service lines, which are offered both individually and in combination based on customer needs, include:
  - Contract and Financial Management
  - Service Quality and System Development
  - Evaluation and Services Research
  - Cultural and Linguistic Competence
  - Program and Project Management.
- CCSI Mission Statement  
CCSI is a management services organization that provides integrated solutions to health and human services customers to fulfill their missions, achieve their goals, and improve the lives of those they serve.
- CCSI Values  
All that we do at CCSI is guided by the following values:
  - Customer Focused: Understanding and meeting the needs of both internal and external customers, being responsive.
  - Solutions Focused: Providing the best possible answer to problems and needs; thinking comprehensively and cross-functionally; entrepreneurial.
  - Collaborative: Working together to achieve goals and objectives; partnering with clients; ensuring win/win relationships.
  - Quality: Excellence in all that we do and how we do it (people, processes, and systems); clear, concise, timely, accurate, and outcome-oriented.
  - Fiscally Responsible: Financial accountability and sustainability; understanding and managing pricing, costs, funding, etc.; providing a solid ROI on the client's investment.
- Statement of Strategic Direction  
CCSI will ensure growth and sustainability and pursue its mission by:
  - Building organizational capability and capacity
  - Increasing organizational alignment, collaboration and teamwork
  - Achieving operational excellence
  - Improving financial operating performance

**Diversity at CCSI**

CCSI recognizes the importance of a culture that embraces diversity and appreciates, understands and values individual differences. We are committed to increasing the diversity of our staff at all levels; to creating an inclusive, respectful and equitable environment; to serving our diverse customers with culturally sensitive services; and to continually improving CCSI's culture through leadership, policies and practices.

**Explanation for M/W/DBE Waiver Request**

CCSI is Requesting a M/W/DBE waiver because are not designated as a women owned business. CCSI values women and minorities in the work place, and two of the company's three officers are female; President, Anne Wilder, and Sr. Vice President & Chief Operating Officer, Donna Peri. 76% of all CCSI employees are female. 22% of CCSI employees associate themselves as a minority.



**COUNTY OF ALLEGHENY****M/W/DBE PARTICIPATION STATEMENT**

Failure to complete this form and submit it with your contract may cause delays in processing

**SOLICITATION AND COMMITMENT****MINORITY, WOMEN AND DISADVANTAGED BUSINESS ENTERPRISES**

FISCAL YEAR/PERIOD	NAME OF PROVIDER	ADDRESS	PHONE NUMBER
2014	Coordinated Care Services, Inc.	1099 Jay Street, Bldg. J, Rochester, NY 14611	585-328-5190
List below ALL M/W/DBE's that were solicited – whether or not commitment was obtained – Copy this form as necessary			
MBE <input type="checkbox"/> WBE <input type="checkbox"/> DBE <input type="checkbox"/> CERTIFIED BY:	TYPES OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED	COMMITMENT MADE <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO (IF YES GIVE DATE)
COMPANY NAME Laurie Allan & Associates, LLC, ADDRESS 118 Fishers Rd., Pittsford, NY 14534 CONTACT PERSON/PHONE Laurie Allan EMAIL	Consulting	SOLICITATION METHOD	MO 3 DAY 21 YR 14
AMOUNT COMMITTED \$			
% OF TOTAL BID			
QUOTE RECEIVED <input type="checkbox"/> YES <input type="checkbox"/> NO			
MBE <input type="checkbox"/> WBE <input type="checkbox"/> DBE <input type="checkbox"/> CERTIFIED BY:	TYPES OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED	COMMITMENT MADE <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO (IF YES GIVE DATE)
COMPANY NAME Ann Boughtin Consulting, LLC ADDRESS 1716 Weeping Elm Circle Port Orange, FL 32128 CONTACT PERSON/PHONE Anne Boughtin EMAIL	Consulting	SOLICITATION METHOD	MO 8 DAY 28 YR 13
AMOUNT COMMITTED \$			
% OF TOTAL BID			
MBE <input type="checkbox"/> WBE <input type="checkbox"/> DBE <input type="checkbox"/> CERTIFIED BY:	TYPES OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED	COMMITMENT MADE <input type="checkbox"/> YES <input type="checkbox"/> NO (IF YES GIVE DATE)
COMPANY NAME ADDRESS CONTACT PERSON/PHONE EMAIL		SOLICITATION METHOD	MO DAY YR
AMOUNT COMMITTED \$			
% OF TOTAL BID			
QUOTE RECEIVED <input type="checkbox"/> YES <input type="checkbox"/> NO			

Prepared By: Mary Simonton Title: Contract Coordinator Date: 4/16/14 Signature: Mary Simonton 4/16/14 for J. B. -

## APPENDIX D

### Allegheny County

#### Vendor Creation Form

Controller's use only:

Supplier No. \_\_\_\_\_

1099 Eligibility:  Yes  No

Add  Change Supplier No. \_\_\_\_\_

Company Information:

Federal Tax ID (TIN)

Coordinated Care Services, Inc.

22-2573042

Company Name (Please type or print)

Original W-9 must be attached

**Required information**  
**Type of Service Provided**

- |  |                                     |
|--|-------------------------------------|
| <input checked="" type="checkbox"/> Independent Contractor | <input type="checkbox"/> Rent       |
| <input type="checkbox"/> Maintenance/Service Agreement     | <input type="checkbox"/> Care Giver |
| <input type="checkbox"/> Insurance                         | <input type="checkbox"/> Legal      |
| <input type="checkbox"/> Personal Reimbursement            | <input type="checkbox"/> Medical    |
| <input type="checkbox"/> Other (please list)               |                                     |

**Type of Commodity Provided**

(please describe below)

Consulting

**Required Information**

**Minority Or Women Owned**  Yes  No

If yes select ethnicity and gender of the vendor below:

- Asian Pacific American
- Black American
- Hispanic American
- Native American
- Subcontinent Asian American
- Non-Minority Woman
- Other

If Yes  Male  Female

Certified By:  PAUCP  PADGS  Non PA Certification

(attach copy of certification)

**Non-Profits including Faith Based Organizations**

- Faith Based Non-Minority
- Faith Based Minority
- African American Non-Profit
- Other Non-Profit

**Outreach Manager Interface**  Yes  No

Judith Be

## APPENDIX D

### Industry Classification by NAICS Code

Primary Industry \_\_\_\_\_

Secondary Industry (if applicable) \_\_\_\_\_

\*If code is not known go to <http://www.census.gov/epcd/naics02/naicod02.htm> and select the correct code.

### Supplier Information (Search Type "P") – (Where PO should be sent to place order)

Please type or print

Company Name \_\_\_\_\_

Telephone Number \_\_\_\_\_

Address Line 1 \_\_\_\_\_

Fax Number \_\_\_\_\_

Address Line 2 \_\_\_\_\_

Address Line 3 \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

ZIP Code \_\_\_\_\_

### Required Information

Supplier/Remit To Information (Search Type "V") – (Where check will be mailed for payment. Check must be made payable to exact name listed under TIN provided or check cannot be processed.)

Please print or type

Supplier/Payee Name \_\_\_\_\_

Coordinated Care Services, Inc.

Address Line 1 \_\_\_\_\_

1099 Jay street, Bldg J

Address Line 2 \_\_\_\_\_

Address Line 3 \_\_\_\_\_

City \_\_\_\_\_

Rochester

State \_\_\_\_\_

New York

ZIP Code \_\_\_\_\_

14611

Telephone Number \_\_\_\_\_

585-328-5190

Fax Number \_\_\_\_\_

585-328-5211

\*If the "remit to" information provided on form does not match invoices submitted for payment, the Controller's Office MUST contact supplier to verify address information before payments are processed. Thank you for your cooperation.

*J. H. Be -*

## APPENDIX D

If the Allegheny County Department with which you do business is known, providing the information below will help in the processing of your payments. Failure to include the information may result in processing delays.

### Allegheny County Departmental Contact

Name                    Leslie Lewis-Pollard  
Telephone No.        412-350-5663  
Fax No.                412-350-3414  
EMail Address:        Llewis-pollard@alleghenycounty.us

### Supplier/Payee Contact Name

Name                    John Crilly  
Telephone No.        585-613-7647  
Fax No.                585-328-5211  
Email Address:        jcrilly@ccsi.org

## **Request for Taxpayer Identification Number and Certification**

**Give Form to the requester. Do not send to the IRS.**

<b>Print or type See Specific Instructions on page 2.</b>	Name (as shown on your income tax return)	
	<b>Coordinated Care Services, Inc.</b>	
Business name/disregarded entity name, if different from above		
Check appropriate box for federal tax classification (required):		
<input type="checkbox"/> Individual/sole proprietor <input checked="" type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate		<input type="checkbox"/> Exempt payee
<input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ►		
<input type="checkbox"/> Other (see instructions) ►		
Address (number, street, and apt. or suite no.)		Requester's name and address (optional)
<b>1099 Jay Street, Bldg J, 3rd Flr</b>		
City, state, and ZIP code		
<b>Rochester, NY 14611</b>		
List account number(s) here (optional)		

**Part I Taxpayer Identification Number (TIN)**

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

**Note.** If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

**Employer identification number**



[REDACTED]

## Part II      Certification

**Under penalties of perjury, I certify that:**

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
  2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
  3. I am a U.S. citizen or other U.S. person (defined below).

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 4.

**Sign Here** Signature of U.S. person ►  Date ► 12/30/13

## General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

## Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
  2. Certify that you are not subject to backup withholding, or
  3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income.

**Note.** If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

**Definition of a U.S. person.** For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
  - A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
  - An estate (other than a foreign estate), or
  - A domestic trust (as defined in Regulations section 301.7701-7).

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.